JANUARY, 1953

Industrial FINISHING

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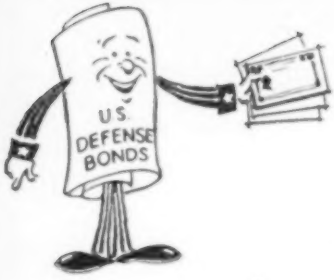

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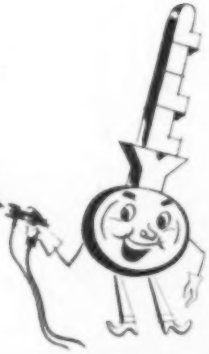
**TO BE "WORRY-FREE"
BUY IN '53 . . . . .
U. S. DEFENSE BONDS!**

BILLY LILLY says:

**TO FINISH "TROUBLE-FREE"
IN '53 . . . . .
USE THE LILLY "KEY!"**



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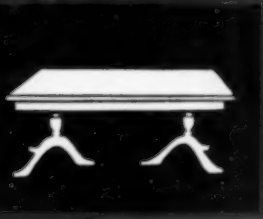
Long wearing Duranite Enamels in varied colors for appliances, other metal products.

Zaponite® Lacquers give furniture a rich, non-fading, mar-resistant finish.



Clear Duranite Enamels protect bright metals; resist acids, alkalis, perspiration.

Zapak® Paper Coatings protect labels; resist moisture, abrasion and cracking.

Finish by

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"SERVICE FROM EVERY ANGLE"

Whether your product is made of metal or wood, paper or plastic, it will look better longer with a custom-tailored ZAPON finish. ZAPON "Service From Every Angle" selects the right finish for your product —and helps iron out all production finishing problems.

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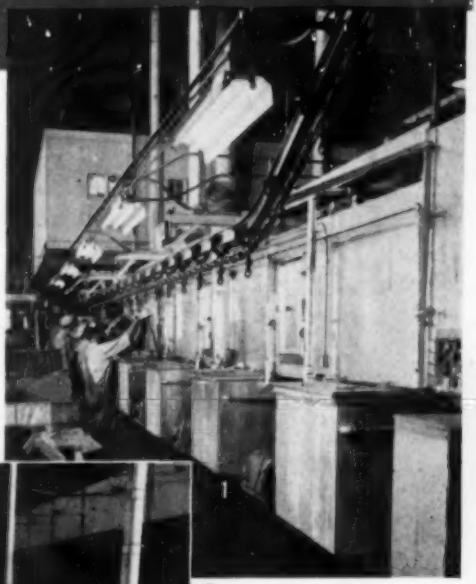
for Industrial Finishes • Stamford, Conn. • North Chicago, Ill.

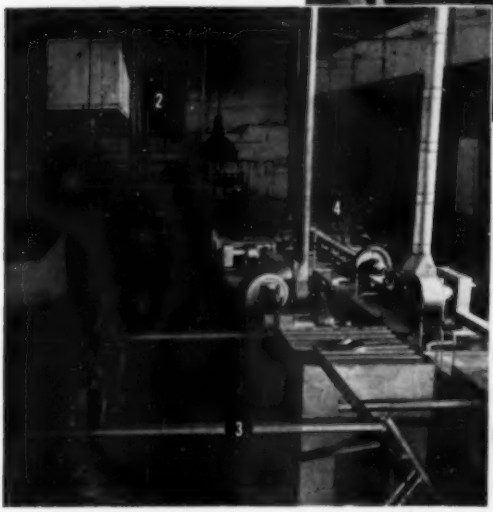
"BEST INVESTMENT WE EVER MADE" —

states C. W. Onan, of Minneapolis

Mr. Onan's reference was to their new Burdett-Engineered Paint Room Modernization Program.

This could well be your statement too, if you could reduce your payroll from 50 to 35 men, yet produce more with improved quality of finish. Comparable savings and increased production can be made in your plant with a Burdett System engineered to your requirements. There are no obligations for Burdett recommendations — write.





1. 4-Stage Spray Washer and Phosphorizing Unit — automatic gas-fired immersion tube heat.
2. 2-Pass Paint Drying Oven suspended at 40 foot elevation — Burdett Radiant Heat System — Drying Cycle 10 min. 350° F.
3. Dry-Off Oven, after wash —Burdett Radiant Heat System — Cycle 3 min. 350° F.
4. 4-Stage Spray Washer.

Photos courtesy D. W. Onan & Sons Minneapolis

BURDETT

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3425 West Madison St., Chicago 24, Illinois

Also Manufacturers of "Radiant Heat" Systems, Ovens, Heaters, Air Make-Up Units, Spray Booths and Washers.

Refreshing finish accents *Stradivarius* group by American

The rich, golden toned finish on this Stradivarius bedroom group by American Furniture Company, is a good example of the results of creative research. Our finish specialists were able to develop a finish that imparts the desired tone and patina and brings out every detail of the design and the beautifully grained walnut. Here is fine furniture with individuality, enhanced by a finish that is both practical and unique.

The better the Finish, the better the Buy

GRAND RAPIDS VARNISH CORPORATION

GRAND RAPIDS, MICHIGAN

Makers of the Famous Guardsman Finish and Guardsman Cleaning Polish

JANUARY, 1953
Vol. XXIX, No. 3

CCA

A monthly magazine for finishing room and paint shop foremen, production superintendents, chemists, purchasing agents and company executives of industrial plants where product surface cleaning and finishing are major operations in the manufacture of parts and products.

Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

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29 TWENTY-NINTH YEAR OF PUBLICATION

1953 Outlook. Only minor changes in over-all business trends are expected by a majority of a panel of 137 of the nation's leading economists recently polled by F. W. Dodge Corp. for an article to be published in Architectural Record.

High-level stability is expected to characterize general business conditions through most of 1953, with the possibility of a quite mild set-back in the second half.

The dollar volume of construction in 1953 "practically equal" to that of booming 1952, is foreseen.

* * *

Cause of Fires. In a report recently issued by the Factory Mutual Engineering Division it was revealed that the three major causes of industrial fires by percent are: electrical, 19%; friction, 14%; foreign substances, 12%.

* * *

Aluminum Plentiful. "There will be plenty of aluminum for all who want it before the middle of 1953, unless there is an extension of hostilities," Richard S. Reynolds, Jr., President of Reynolds Metals Co., predicted. "With the industry continuing to expand its capacity at a record pace," he added, "the supply situation in 1953 should be much easier than at any time since the Korean war began."

"Although the 1952 production, estimated to be close to 1.9 billion pounds, sets a new all-time peak and is 11% greater than the 1951 output, it does not fully reflect the expansion already completed. The 1952 output would have been greater except for the substantial production losses being suffered by the industry because of the severe power shortages in the Northwest and TVA areas and the delay in new plant construction caused by the steel strike.

"The big surge in actual production," Mr. Reynolds declared, "is coming in 1953 and 1954, with an output of 2.5 billion pounds expected in 1953 and about 3 billion in 1954."

* * *

On the Level is the safest way in all dealings with others—and with yourself too, especially when you go up to much higher levels.

To keep a ladder "on the level" and safe, the Jon-Ne-Fut Handy Ladder Stabilizer enables the user to place his ladder on a level footing by simply adjusting the legs to the contour of any surface at all angles—level, uneven or slanting. Positive ball and socket mechanism is self-adjusting to insure

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non-slippage of ladder base. Three models offer complete ladder protection. They are precision machined for fast, easy, positive adjustment. Produced by Jon-Ne-Fut Mfg. Co., Inc., 4029 E. Firestone Blvd., South Gate, Calif.

* * *

Smoke Alarm. Many automatic alarm devices are available for signaling a fire but now comes an alarm, electrically operated to signal the presence of smoke in the air of a room or warehouse. This device should prove useful in plants and storage rooms after work hours to detect and warn of a smoldering fire before the blaze is sufficiently large and hot to operate the automatic alarms or sprinkler system. The sooner a fire is detected, the smaller the loss will be.

Air in the room is continuously circulated through the device by a motor operated aspirator. Normal air keeps the alarm switch open, but if the flow is slowed by the presence of smoke, the switch closes and sounds an alarm. An attachment is provided to prevent false alarms when the device is not in operation.

* * *

Furniture of Mixed Woods. At a recent showing in New York, some furniture displayed was made up of woven cane, metal, tubing, plastic surfaces and tubing and procelain knobs. The species of woods used are mixed rather than matched. This getting away from the suite or correlated group idea is something different.

Sixteen different chests, cabinets, open shelf units or combinations of these, in four widths and two heights, were shown. All have the same depth and leg height. Some were in figured rosewood; others in pale oak. Of special interest are the delicate porcelain knobs used for door and drawer

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Paint Heaters For Industry

MODERNIZE Your Finishing Technique With DUALHEET HOT SPRAY...

And Get These Dualheet Features!

- Used singly, wall mounted or portable—or, in "Tandem" style ganged together in one outer jacket.
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Top or bottom—wherever a finish is indicated to meet government specs, you'll find us amply qualified to serve you and that goes for your own production schedules, as well. We're rated tops in specialized know-how, having licked some of the toughest finishing problems for scores of manufacturers.

- Lustreless, semi-gloss lacquers
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- Thinners
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pulls. Miniature cabinets in teak wood with white Formica tops were included.

Tables with teak wood tops, with a center panel of the same wood stained dark, were shown. These tables have a soft edge, achieved by cementing black and white vinyl plastic tubing into a groove bordering the edge.

* * *

One-a-Month Kit. A "one-a-month" information kit describing permanent magnet application ideas for industry has been announced by the Carboloy Department of General Electric Co., Detroit 32, Mich.

The basic "kit" consists of a heavy permanent binder with six application ideas, each described on a separate loose leaf page. Each month, the Department plans to issue a new magnet application sheet which will be distributed automatically to those who request the basic information kit. Each idea sheet contains complete technical information and diagrams regarding the particular application described.

* * *

Lubricating-Enamels. New tough, adherent, load-bearing dry-lubricant finishes may now be applied to any machine or instrument surface, using ordinary brush or spray techniques. New types of "Liqui-Moly" molybdenum-base lubricating-enamels are now being offered on an experimental basis by the Lubricants Division of The Lockrey Co., Southampton, N. Y., originators of "liquified" MoS2 lubricants.

This radically new concept of lubricant follows three years of development work and introduction of other types of Liqui-Moly lubricants into nearly every leading industrial operation in the country, including many applications in the Armed Forces. One variety, developed especially for au-

(Continued on page 105)

there may be red ink in your spray booths!

Are you losing money on neglected spray booths? Many plant owners are tracing the red ink in their balance sheets to spray booth extravagance. They find hundreds of dollars a day are being wasted because of production shut downs, more maintenance, unreclaimable paint and general booth operating troubles.

Learn how to CUT COSTS with **DuBOIS** SPRAY BOOTH MAINTENANCE

Here's what you get when you do business with DuBois:

1. Thorough analysis of your operations by trained and experienced personnel.
2. Installation of prescribed specialized compounds:
   KLARIFIANTS . . . water-wash compounds to effectively control overspray
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FREE . . . authoritative reprint:

PROBLEMS OF SPRAY BOOTH MAINTENANCE

. . . . yours for the asking, a survey of the practical aspects of paint booth maintenance—how to save operating costs.

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A DEPENDABLE new Basic White Litho coating having unique properties has been developed by the Watson-Standard laboratories.

This Basic White Coating has all the outstanding properties of alkyd coatings, yet retains the ease of handling of oleoresinous coatings.

This revolutionary coating may be reduced with mineral spirits and tinted with either oleoresinous or alkyd tinting colors.

It has outstanding color retention on initial baking and on rebaking plus excellent fabrication properties—even to the extent of fabrication of screw caps.

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Engineered

FINISHING SYSTEMS

Space does not permit us to show or even list the hundreds of satisfied users of DESPATCH Engineered Finishing Systems who have proved their dependability with increased production and improved quality, however, the four shown are typical examples.

DESPATCH FINISHING SYSTEMS are designed and built to finish your product better, faster and more economically. They are engineered to fit your particular requirements. You can get a complete system or individual units, such as—

- BAKING OVENS
- SPRAY BOOTHS
- WASHERS
- DRYOFF OVENS
- FLOW COATERS
- CONVEYORS
- AIR MAKEUP SYSTEMS

Resident engineers located in your vicinity are ready to help you with your finishing problems.

Lyle Sign Co., Minneapolis, increased metal sign production 25%, with DESPATCH conveyorized Finishing System.

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to help your product finish help increase sales

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INDUSTRIAL FINISHES

FURNITURE FINISHES
COMMON PROBLEMS in PRODUCTS FINISHING
Get these "BEAUTY SECRETS"
for finishing furniture and wood products!

Are you getting the results you need from stains . . . fillers . . . sealers? Are your top-coat materials providing the sales appeal you need for competitive selling? Here's help in checking present methods and materials as well as possible finishing problems.

Helpful Facts on Finishing Furniture and Wood Products (Brochure F-501)—Tells about uses of various stains . . . most successful methods of bleaching, antiquing, special finishing . . . application information covering stains, sealers, top-coats.

Common Problems in Product Finishing (Brochure CFP-513)—A handy check list in finding causes and cures for product finishing difficulties.

These books are part of the "on-the-spot," local industrial service offered to manufacturers everywhere through more than 500 Sherwin-Williams Branches. Consult your classified telephone directory—check this handy source for your product finishing needs, and ask for brochures listed here. Or write The Sherwin-Williams Co., General Industrial Division, Cleveland 1, Ohio.

Services of trained industrial finish specialists available in your area through nearest Branch

Every plant reached by INDUSTRIAL FINISHING uses organic finishes and related equipment for product coating . . .

THE MARKET: *INDUSTRIAL FINISHING*

reaches practically every important U. S. plant in which organic finishes are used for product coating. These plants perform the following operations on parts and products made of metal, wood, plastic and composition: surface preparation, application of coatings, sanding, buffing, paint drying and baking, rubbing, and polishing

EDITORIAL APPROACH

INDUSTRIAL FINISHING is written for paint-shop and finishing department foremen, production superintendents and company officials concerned with production. Articles present new and authoritative information on materials, equipment, supplies and methods developed for and used in the application of product coatings. In addition to the editor and full-time traveling associate editor, articles are prepared by more than 100 regular contributors who are experts in one or more branches of the organic finishing field.

PRODUCTS ADVERTISED

INDUSTRIAL FINISHING carries more advertising devoted to organic finishing materials and related equipment than any other publication. Present advertisers feature the following products: PROTECTIVE COATINGS – lacquers, enamels, synthetics, varnishes, primers, stains, fillers. SURFACE PREPARATION CHEMICALS AND EQUIPMENT – cleaning and rust preventive materials, solvents, degreasers, washers, burn-off ovens. PAINT APPLICATION EQUIPMENT–spray guns, booths, roller coaters, dip tanks, centrifugal whirling enamelers, flow coaters, screen process printing presses. DRYING AND BAKING EQUIPMENT–paint drying and baking ovens (convection and infra-red). COMPLETE FINISHING SYSTEMS–standard systems and special systems engineered to specific needs, conveyors. ACCESSORIES AND SUPPLIES–grinding and polishing machinery, portable sanding and rubbing machines, abrasives, spray booth compounds and peel-off coatings, polishes, waxes, tack rags.

By

PRACTICAL PUBLICATIONS, Inc.
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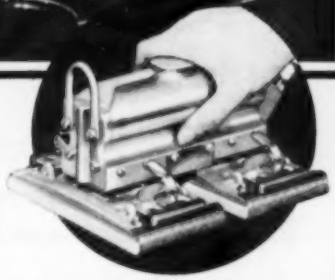

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. . . ranging from a versatile single-pad sander up to a heavy-duty double-pad model. Each available with all necessary accessories for any finishing operation.

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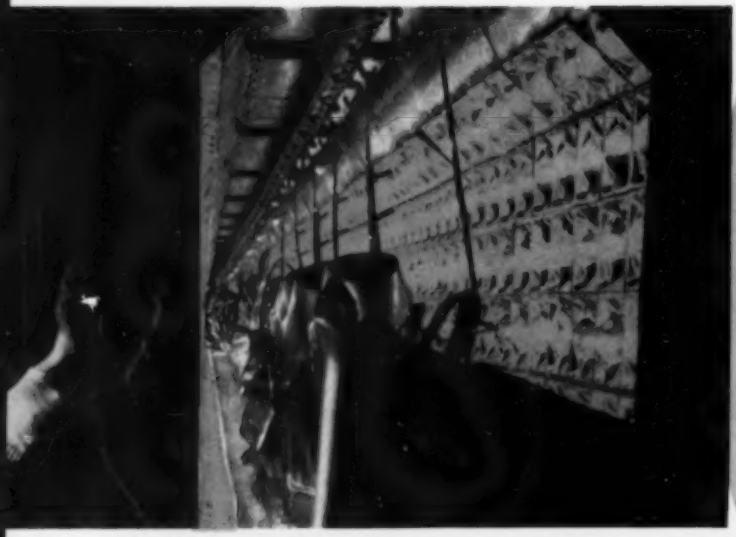
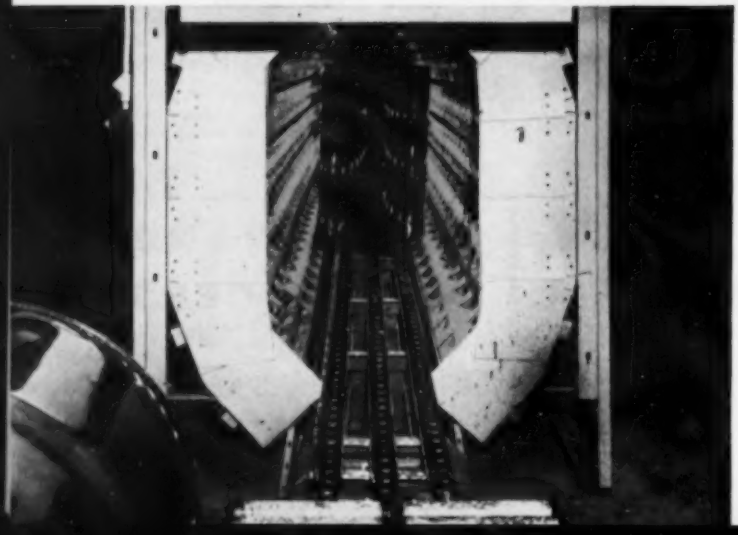


TYPICAL EXAMPLES OF FOSTORIA ADVANTAGES

Studebaker, Canada has 7 Fostoria ovens used for Bonderite, prime and finish coat drying of bodies and parts. Time is about half formerly needed. Maintenance reduced 75% over older methods. Finishes improved by penetration of heat through paint film. Cleanliness has practically eliminated rejects and reprocessing.

MOST EFFICIENT OF ALL FINISH BAKING OVENS



This Fostoria oven at Canadian Oil, Ltd. bakes yellow and white finish on oil and grease drums in 4 minutes. Production of 200-100 lb. grease drums and 100-45 gal. oil drums has been obtained. Starting section of oven has 500 W lamps. Balance of oven has 500 W lamps top and bottom rows and 250 W lamps in remainder.

FOSTORIA OVENS

For FINEST FINISH QUALITY

Lowest "Per Piece" Production Cost

UNEQUALLED LOW-COST ADVANTAGES

1 **LOWEST OPERATING COST**
Puts heat into the product — not into oven walls. Uses less fuel. Gold plated interior reduces heat loss to 2%.

2 **REQUIRES LESS FLOOR SPACE**
Shorter Cycles — most production for oven size. May be ceiling mounted.

3 **FASTEST PRODUCTION**
Fastest means of heat transfer. No warm-up required — no shut-off lag. Heat levels instantly changeable.

4 **LOWEST MAINTENANCE COST**
Clean operation — no combustion by-products. Lowest source replacement cost.

5 **COMFORTABLE WORKING CONDITIONS**
No room ventilation problem.

6 **COMPETITIVE INITIAL COST**
Comparable to any quality-built oven.

UNEQUALLED QUALITY ADVANTAGES

1 **SMOOTH "FLOW-OUT" OF PAINT**
Uniformity of heat distribution and rapidity of solvent removal give smooth, even paint film.

2 **THOROUGH UNIFORM BAKE**
Near Infra-red energy penetrates paint film with constant uniform temperature.

3 **CLEAN FINISH**
No by-product of combustion — no condensation of solvent volatiles to mar finish.

4 **SAFETY CONTROLLED**
Instant heat shut-off with conveyor stoppage. No over-baking by shut-off lag.

Write for brochure of technical facts on Infra-red and case histories of many Fostoria oven installations. Tell us about your particular problem and we will include data directly applicable to your operations.

FOSTORIA PUTS HEAT INTO THE PRODUCT — NOT IN THE OVEN WALLS

INFRA-RED fostoria OVENS

Send for Complete Facts

THE FOSTORIA PRESSED STEEL CORP.
FOSTORIA, OHIO, Dept. IP

Please send information on Infra-red ovens for

.....

Name .....

Company .....

Street .....

City ..... State .....

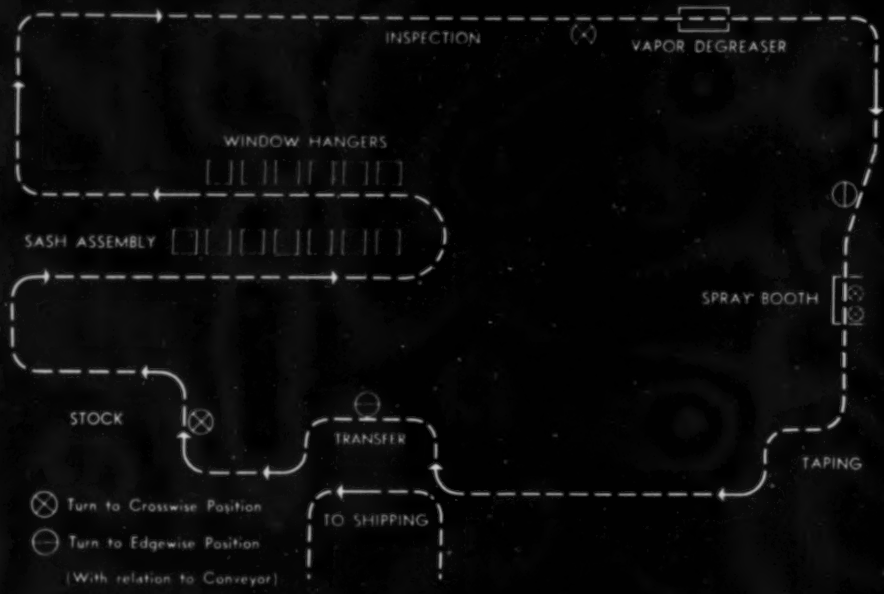
CONVEYORIZED CLEANING AND COATING OF

Aluminum Windows

MOST ALUMINUM windows are given a protective coating, the preferred coating material being a clear water-white methacrylate type of lacquer which is resistant to alkaline mortar and plaster. When the windows are installed, this clear lacquer coat allows the adjoining mortar and plaster to dry without any chemical effect upon the aluminum, and permits the easy removal of any overruns or splashes of the materials from the exposed surfaces of the windows. The protective lacquer coat is applied in the plant where the aluminum sash and frames are made.

Overhead Cable Conveyor Serves Dual Purpose

Naturally the more simple and convenient the system for applying lacquer the greater the production and the lower costs. We installed an overhead trolley cable conveyor



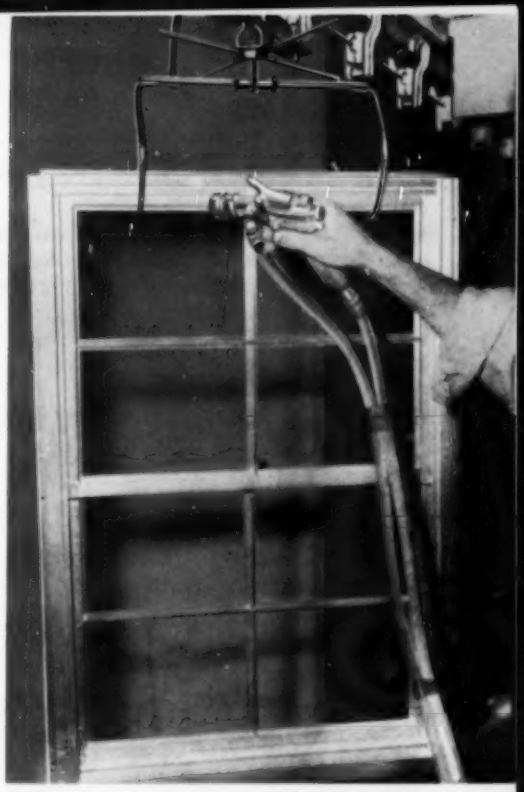
BY S. K. JORDAN
Finishing Foreman
Ceco Steel Products Corporation
Sterling Aluminum Window Division

650-ft. long with trolley wheels on 12-in. centers, and load bars on 5-ft. centers. This is a combination assembly and finishing conveyor and it travels at the rate of 10-ft. per minute. Another similar overhead trolley cable conveyor, moving along at 12-ft. per minute, carries the completed windows to the warehouse and shipping department.

Windows Turn Automatically While They Travel

Referring to the layout diagram that accompanies this article, you will see indicated six stations where windows are automatically turned from a crosswise position, in relation to the conveyor, to an edgewise position (parallel with the conveyor) or vice versa. Two of these stations are located in the spray booth, making it possible to automatically reverse the window and enable the operator to easily spray both sides. The load bar from which windows are suspended is constructed with a star wheel cam action so that it may be rotated 360° or in a complete circle. Slots are placed at 90° and 180°, and pins cause the hanger to index at these points. This type of construction is necessary to control the position of the hanging window at all times.

The window turning stations permit windows to travel parallel with



Spraying a protective coat of clear lacquer onto window frame and its sash. Photograph, courtesy of The E. W. Buschman Co.

the conveyor from the assemblers to a point just ahead of the vapor degreaser. This arrangement conserves valuable floor space along both sides of the conveyor, and permits final inspection on the conveyor prior to degreasing and coating. The windows are turned to crosswise position before entering the degreaser; this permits a more abrupt angle in the conveyor as it drops down into the degreaser tank and returns to its normal overhead level. The advantage of this plan is that the degreaser tank can be shorter in length to accommodate the products which move through it.

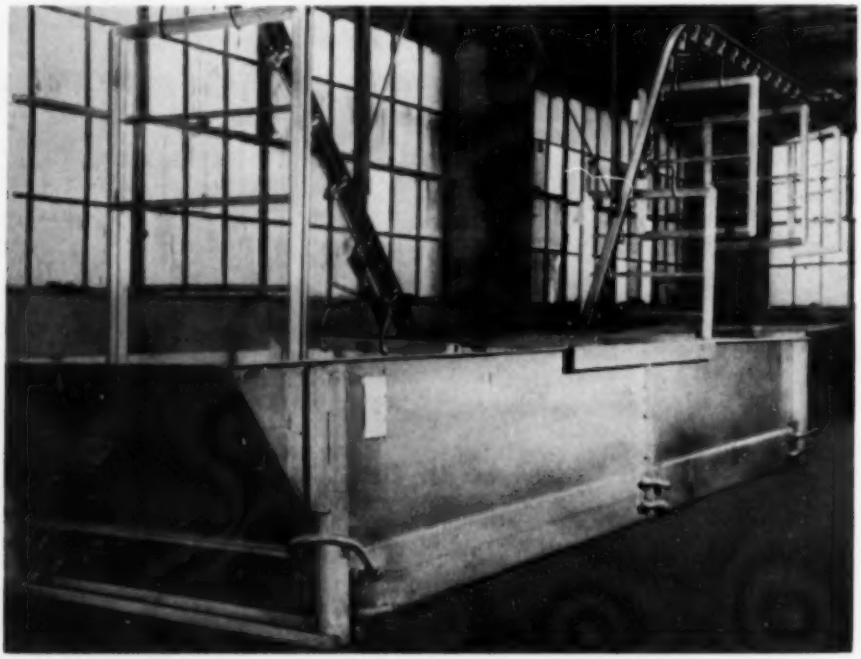
Following the degreasing operation, the windows hanging from the

conveyor must be turned from crosswise to edgewise position to enter those narrow entrance and exit openings in our spray booth. If the windows remained in a crosswise position under the conveyor, these openings to the spray booth would have to be 48-in. or more in width.

Inside the spray booth the windows are automatically reversed by the action of two turning stations, so that both sides can be sprayed easily. They leave the spray booth in an edgewise position or parallel with the conveyor, to travel to the transfer point where they are removed and hung on a conveyor that transfers them to the warehouse and shipping room.

At the beginning of operations a workman loads the conveyor with aluminum window frames, placing them in a crosswise position. These frames travel to the window hangers who remove each frame and put in the sash which are assembled at a station next to the window hangers. Every completed window (frame and two sash) is returned to the conveyor and travels past inspectors.

All oil and finger marks are removed from the aluminum surfaces in the trichlorethylene vapor degreaser where the metal tempera-



Windows, hanging crosswise of the conveyor, entering and leaving vapor degreasing tank which extends far down below the floor level. Photo, courtesy of The E. W. Buschman Co.

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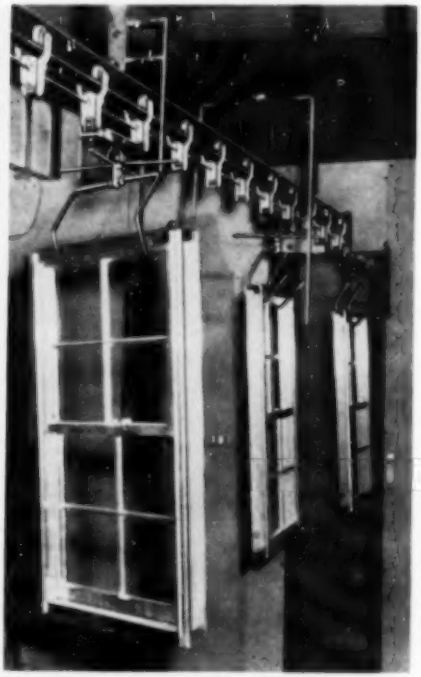

Here windows, hanging from conveyor, are turned from crosswise to edgewise position (with relation to travel of conveyor) so they can easily enter narrow opening to spray booth. Photograph, courtesy of The E. W. Buschman Co.

ture is brought up to about 125° F. The metal cools for about three minutes before it enters the spray booth; however, the metal temperature is from 100° to 110° F. when it is spray coated. Spraying the lacquer on these warm dry metal surfaces causes the coating to dry almost immediately. By the time the window travels to the transfer point—about 12 minutes—its surfaces are cool and the finish is dry and hard.

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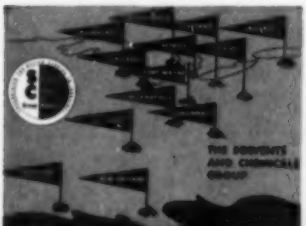

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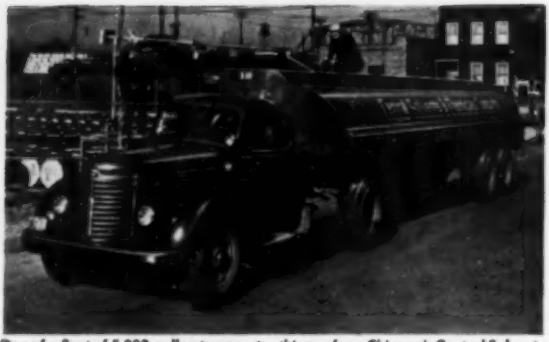

One of a fleet of 5,000 gallon transports—this one from Chicago's Central Solvents

Personal attention is the one thing that customers value most. Unfortunately, a rapid growth in size usually reduces the amount of personal attention available. This needn't be the case, as illustrated by the 11 members of the Solvents & Chemicals Group. The Group delivering millions of gallons of solvents and tons of chemicals to industry throughout the Midwest has licked the bugaboo of big company immobility

The ability to move quickly, to meet each situation is provided for by permitting each member to operate as an individual company Yet, because of the tremendous distribution facilities available in key markets serving paint, metal working, graphic arts and chemical compounding industries, many leading chemical producers have chosen the Group to represent them.

SPEEDY DELIVERY. One factor that most firms appreciate is the promptness in shipping which all members of the Group offer. In most cases, orders are delivered within a 24-hour period. In cases where a product is not available locally shipments frequently can be rushed from the nearest Group member having adequate supplies. Thus, local shortages can often be overcome in cases of emergency.

WIDE RANGE OF PRODUCT. The basic concept in the Group's organization has been to provide a complete line of products in its field. Among the many products available, Group members offer 9 chlorinated solvents in various grades, 14 aliphatic petroleum naphthas, 10 aromatic solvents and 20

Laboratory facilities like this at Indianapolis' Hoosier Solvents are used to assist with customers' problems as well as maintain quality control.

Stake trucks and tank wagons (like these from Buffalo Solvents) provide speedy delivery of drum and bulk solvent promptly pick up drums.

Orders delivered within 24 hours in most cases from stocks as those at Milwaukee's Wisconsin Solvents.

Like other members, Cleveland's Ohio Solvents offers a catalog system listing properties on all products marketed.

different plasticizers. Because of this wide range of product, Group members can select and suggest the specific product that will best meet the customer's need. Whether it's a solvent for coatings, or for inks or a solvent for cleaning, you get the right product from your Group member

QUALITY CONTROL. Keeping abreast of new products and meeting customer problems has developed a unique set of facilities for the Group. Laboratory facilities are available not only to check incoming products but to offer technical assistance on solvents and chemicals on request. Laboratory assistance right in the market helps many salesmen whose companies are Solvents & Chemicals Group customers.

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HOW TO CUT THE COST OF

Finishing your Product

C. RAYMOND SYER, SR.
Consulting Finishing Industrial Engineer

MANY THINGS enter into the cost of finishing a product. A number of these will be mentioned in this article which describes procedures for reducing costs, together with suggestions on how to obtain a quality finish —one that has durability as well as effective sales and eye appeal characteristics.

To make a quality product it is necessary to set up standard operating procedures. Mistakes can be avoided by first arranging a plan of procedure, and then working the plan. Along with this plan each worker should understand clearly what he is to do and why.

An educational program, including class room instructions, may need to be worked out, not only to inform workmen but to satisfy their natural desire to find out why certain processes are performed in the way specified. This procedure should be compiled with two basic ideas in mind, namely: That a person cannot be taught, but can only be assisted in teaching himself; and that "quality" must be built into a product; it cannot be inspected in.

Let us go back and find some of the items that make up the cost of finishing a product. Any of these items, if not properly controlled, can interfere with producing a quality finish at a minimum cost.

Starting at the beginning, the author calls attention to metal surface preparation — specifically cleaning and phosphating — as an ideal basis for paint coatings that must stand severe tests. Features of 5-stage equipment are discussed, along with plans for higher quality work and less waste of materials and labor.

Material Cost
- Metal preparation chemicals
- Paints (and inks, if used)
- Solvents and thinners
- Spray booth coatings
- Water wash compounds
- Masking paper
- Miscellaneous items

Equipment
- Metal preparation machines
- Spray painting facilities
- Pressure tanks
- Air and fluid hose
- Air cleaners
- Electrostatic coating
- Roller coating machines
- Lithographing equipment
- Conveyors
- Fire prevention equipment
- Dip coating facilities
- Flow coating machines
- Baking and dry-off ovens
- Paint heaters
- Agitating equipment
- Miscellaneous items

Replacement parts
Labor, direct and indirect
Maintenance charges
Equipment repairs*
Charges for water, air, steam, gas, electricity, etc.
Overhead expense

To cover all of these items completely would require a book, therefore this article will be limited to the preparation of metal surfaces for receiving paint coatings.

As industrial operations become more precise and more demanding of mechanical efficiency and high quality, it is only natural that surface preparation should be viewed as critically as any other finishing operation.

It is a well-established fact that a phosphate coating, produced by chemically treating the clean surfaces of formed sheet steel (and aluminum) parts gives improved adhesion for any paint, enamel or lacquer coating that may be applied over it. This surface treatment also improves the resistance of any paint coating to weathering, salt-spray, humidity and moisture. A phosphate coating prevents the spread of corrosion from later breaks or scratches in the organic coating system. It also reduces the possibility of the paint blistering or peeling.

Poor paint adhesion is caused more often by inadequate surface preparation before painting than by the use of any "poor quality finishing materials".

Selection of Equipment; Call in Informed Men

In hundreds of industrial applications, experience has shown that the selection of equipment and surface preparation operations is too vital a subject to be casually dismissed. A thought to keep in mind is that, "The finish coat, regardless of its cost or quality, can be no better than the under coat or the prepared metal surface on which the primer is applied".

The cost of a machine for metal surface preparation will depend upon several factors, including the system to be used and its operating efficiency. Let us assume that we are going to use a 5-stage spray phosphatizing machine. Now the satisfactory application of any phosphatizing material is largely dependent upon the correct use of suitably designed equipment. This

*This includes cleaning and proper upkeep of equipment so it is always in efficient working condition. Carelessly kept equipment results in loss of time, loss of production, poor quality workmanship and lack of interest on the part of employees.

is needed to provide continuous trouble-free operation at maximum efficiency.

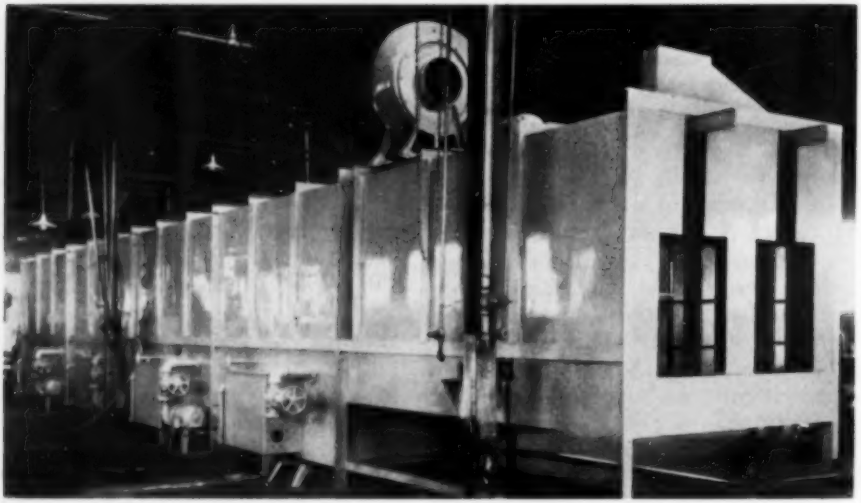
Before deciding upon, buying or installing any surface preparation facilities it is always best to call in representatives from both the chemical and equipment manufacturers for the purpose of discussing some of the major problems, for example the:

A) Process suggested or planned.
B) Exact sequence of operations.
C) Building layout.
D) Method of handling to tie in in with other operations.
E) Production schedules.
F) Other important items.

By following such a procedure when plans are in the making, the best designed equipment and method for processing can be selected to produce a quality job of phosphate coating. A 5-stage phosphating machine will take care of the combined cleaning and phosphating operations.

Remove Scale, Rust, Tar, Heavy Soil First

All materials to be processed should be free from pitted oxides, loose scale and any organic materials that can not be removed by mild cleaners. Any patches or overall coatings of heavy rust or tar must be removed before the metal is processed. Since the phosphate coating is formed by a chemical reaction between the base metal and the phosphate solution, any variation in the metal will cause a corresponding change in the coating. The most uniform coating is



A 5-stage metal cleaning and phosphating machine built for two parallel conveyor lines of pressed steel products. The first two units (far at left) are for the surface cleaning and phosphate coating operations. Next comes a clear hot water rinse, followed by a mild chromic acid rinse and finally the drying chamber. Photo, courtesy of Alvey-Ferguson Co.

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formed on cold rolled steel. For example, "Spray Bonderite 100" is a chemical designed for the conversion of iron, steel and zinc surfaces to a non-metallic phosphate coating.

The increase in durability and life of paint coatings that are applied over the phosphatized surface is due to the chemically clean, grease - free corrosion - inhibiting surface provided for the film of paint; and the non-conducting bond between the base metal and the paint.

A chromic acid mixture, which reduces the yellow stains that commonly result from the use of a straight chromic acid, is desirable as a conditioning rinse.

Regardless of what make or type of metal cleaning and phosphating equipment is installed, an important addition will be an instruction manual or guide that gives detailed information on correct and economical operation and maintenance—something an average workman can quickly grasp and easily understand.

Set Up and Maintain Process Controls

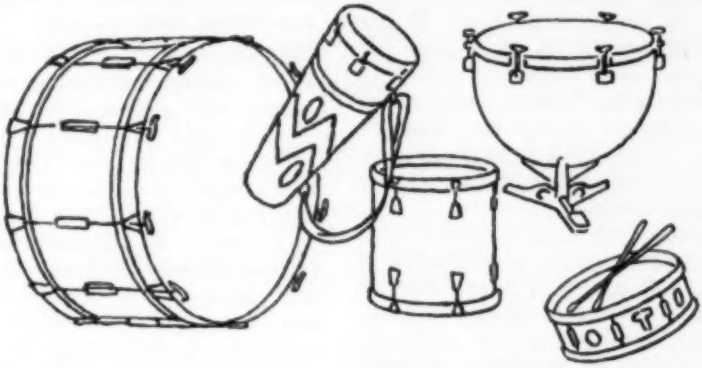
Real savings can be made by setting up process controls for the concentration of chemicals, together with maintenance instructions. Close control of the phosphating bath is necessary. Failure to check periodically the concentration of chemicals in the phosphating baths in your plant may actually result in the treatment doing more harm than good to your protective coating system.

In plants I have serviced, I have often noticed that excessive quantities of chemicals were being wasted every day because those companies were not using controlled methods or procedure. Again, in these plants, as well as in others I have serviced over the past several years, I have seen phosphating equipment on which, apparently, very little time or engineering had been spent to design it for efficient operation. The design would not permit the user to get the desired quality of phosphate coating at a minimum cost of operation.

Features of the Cleaning Phosphating Machine

Some important features to consider when appraising the value of a machine for cleaning and phosphating metal products are: Spray zones should be separated by a sufficient distance to guard against excessive mixing of solutions by splash from sprays or from drain and carry-over. The time that parts are in drain spaces should be kept as low as practical. Splash guards should be provided at inlet and exit ends of each spray zone to reduce splash distance and air circulation through the equipment.

Drain space floors should be sloped in the proper direction for return of spray splash and drip, back to the proper storage tank; and should be of heavy plate reinforced sufficiently to prevent buckling or unnecessary vibration. A suitable type of spray shield should be provided through the spray washing and processing units, including drain spaces between spray zones, to prevent "carry-over" and keep the solution off the conveyor chain and trolleys. [*To page 34*]



All drums look alike!

We've a point to make — one drum of chemicals looks like the next and there is no practical way for you to prejudge the ability of a drum of chemical to do the job you require. For the most part, chemicals are bought on confidence — on the recommendations of responsible chemical suppliers and their engineers.

For 10 years Klem Chemicals, Inc. has served important large and small manufacturers of production parts and products. Klem has analyzed countless unusual conditions and successfully produced compounds that have enabled industrialists to eliminate bottlenecks and establish profitable production schedules. Klem has also developed many standard formulae for meeting tough, but not uncommon conditions.

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Rinsing between the principal stages is really important. It reduces contamination of the operating baths, each of which is different chemically. Where spray zones are relatively long, the headers should be supplied near their centers and feed both ways, rather than end feeding.

Another important factor to consider is the proper positioning of risers and nozzles. Spray nozzles should be spaced to insure continuous and complete spray coverage. Care should be exercised to stagger the spacing of nozzles in various spray risers so that actually the spacing in alternate risers is not greater than one half the center distances. Of course, we all understand the importance of keeping the risers and spray nozzles free of sludge or foreign substance to prevent clogging.

Where to Look to Get Better Results, Less Waste

Any "carry-over" of material from one stage to another will cause contamination which produces waste of chemicals because of the need of more frequent dumping of expensive chemicals and the replenishment of chemicals to hold the solutions to the desired operating concentration. Frequent dumping, replenishment and maintenance are a direct loss in operating costs, as well as in the labor involved.

The mechanical features mentioned here represent only a few of the major factors that should be given thorough consideration in order to keep operating costs down to a minimum and to always get a good job of surface preparation.

Rejects; Evaluation Tests; Cost Data, and . . . .

Rejects are a direct drain on profits. Without operating controls, rejects will appear. Water spots or stains are frequently noticed as the cause of rejects. The dry-off oven should be designed to provide plenty of heat and time for a thorough drying of all surface areas. The use of well designed equipment and the complete control of each and every operation will go a long way toward preventing rejects.

It is important that the phosphate coating thickness or "weight" be determined. The thickness or "weight" and other characteristics of a phosphate coating will depend upon the strength of the chemical solution and the length of time the metal in process is exposed to same. The required coating weight can be determined by making test panels and subjecting them to the required evaluation tests. A phosphate coating that is uneven or too light will not have the required protection or adhesion qualities. On the other hand a coat that is too heavy might be the cause of fracturing the paint surface in such areas where a roller coat finish is applied before drawing or fabricating are performed.

When the desired surface coating has been determined and controls are set up for the various operations, it is suggested that a daily record or weekly summary be tabulated to show the cost per thousand square feet of coverage. This task can be accomplished by keeping a record of the amount of chemical used plus the square feet coverage. After several runs have been

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made a cost price can be obtained which can be used as a standard cost. Using these cost figures, one can quickly tell when costs get out of line. In those plants where I have set up these procedures and controls, the annual savings derived have amounted to from $2500 to $10,000 in chemical consumption alone. An equal saving has occurred in some plants from the reduction in cost of maintenance labor. Along with these savings, there have been what might be called "intangible savings", such as increases in production, cuts in rejects, reduction in replacement parts, savings in heat, etc.

With controls carefully followed, the standard of quality improves. Uniformly high quality in any product will help increase sales and assure more satisfied customers.

With the intelligent use of proper controls, savings in your plant will increase in proportion to your production requirements. If you are not using a control system for operating and maintaining your phosphatizing equipment I suggest that you consider the adoption of a carefully outlined system. You will be surprised at the many savings possible, and the improvement in quality that will materialize from following such a program.

Editor's Note: Along with the

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• CLEANS THE METAL
• REMOVES THE RUST
• ETCHES THE METAL
providing an anchor for your paint and a PHOSPHATE COATING for greater paint durability.
Also recommended for Spot Rust Removing after Mechanical Cleaning.
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If you have a paint drying problem, just say the word and we shall be glad to have our representative call.

Unload end of refinishing oven for steel drums

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Write for Bulletin 951

MICHIGAN OVEN COMPANY

417 Brainard St. Detroit 1, Mich.

foregoing article, Mr. Syer included 13 typewritten pages of detailed instructions on the operation, control, testing and maintenance of certain materials and equipment for cleaning and producing a phosphate coating on 81-mm mortar shells before painting. Anyone interested in obtaining one or more copies of these detailed instructions can probably obtain same from Mr. Syer, for a nominal charge.

Book of Shellac Analysis

A copy of the Second Edition (1952) of "A Handbook of Shellac Analysis", revised by two distinguished authorities on the subject, has been received from Indian Lac Research Institute, Namkum, Bihar, India. The book has 144 pages, slightly less than 7½x10-in. in size. It's contents are divided into 15 chapters. Several illustrations are included in the book. An alphabetical index of subjects included in this informative volume, occupies the last 12 pages.

New Trailer Finishing Folder

A new folder entitled, "Brolite Trailer Finishes and Recommended Methods of Application" is the result of years of testing, research, and practical application in the trailer finishing field. Its purpose is to give the industry a simple, concise summary of the most efficient trailer finishing methods.

Copies of the Brolite Trailer Folder can be obtained without charge by writing to Publications Department, Andrew Brown Co., 5431 South District Boulevard, Los Angeles 22, California.

Beckwith, V. P. & Tech. Director of Rinshed-Mason Co.

Newell P. Beckwith has been made vice-president and technical director of the Rinshed-Mason Co., manufacturer of automotive, industrial and architectural finishes, Detroit, Mich.

Previous to this appointment, Beckwith was Director of Research at R-M. He is a graduate chemist and is currently National Treasurer of the Federation of Paint & Varnish Production Clubs, and Chairman of the Joint Technical Educational Committee of National Paint Organizations.

He is on the D-1 Committee of the American Society for Testing Materials and a member of the Society of Automotive Engineers.

DRY and LACQUER
in ONE OPERATION
to Speed Finishing of
Electroplated Items Like These!

Specially Formulated

EGYPTIAN WATER DIP LACQUER

Because Egyptian Water Dip Lacquer is especially formulated to displace moisture from electroplated surfaces, enthusiastic manufacturers finishing small steel, aluminum, brass, cadmium and zinc articles are reaping the benefits of stepped-up finishing room production.

"ONE OPERATION" Egyptian Water Dip Lacquer makes practicable the passing of small electroplated pieces from the final plating rinse directly to the dipping basket or rack. Troublesome, time consuming sawdust pile and other drying processes are completely circumvented.

Egyptian Water Dip Lacquer's efficient instantaneous moisture displacement action insures against stains or water spots . . . dries to a hard, highly adherent, practically water white, tarnish resisting finish in ten minutes at room temperature.

Egyptian "ONE OPERATION" Water Dip Lacquer may be just what you need to speed small product finishing in your plant.

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Please have an Egyptian Industrial Finishing Specialist call on me soon. I would like to know how Egyptian Water Dip Lacquer can cut my Finishing Costs.

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General view of two traveling spray booths side by side. Each booth is the shape of an inverted block letter U. You are looking at the power end of each booth. Above, exhaust ducts from both sides of each spray booth discharge through open louvres on the underside of parallel ducts just below the room ceiling. The louvres open automatically just above the discharge openings of the spray booth exhaust, while elsewhere they remain closed.

Traveling Spray Booths

USED IN PAINTING PULLMAN CARS

BY J. W. LIMBROCK
Plant Maintenance Engineer
The Pullman Company

MOVING a spray booth to the work instead of taking work to the spray booths marks a new era in spray painting of railway sleeping cars, as compared to the conventional type of semi-down-draft spray booths that we formerly used. Each traveling spray booth now in operation in two of The Pullman Company's repair shops is 12x18-ft.; each one travels on rails and occupies only 216-sq.ft. of floor space at a time.

Through the use of these traveling spray booths the paint room at

our Calumet Shops—only 200-ft. long by 44-ft. wide—will accommodate four Pullman cars. Two parallel sets of standard gauge track extend the entire length of the building. Each pair of tracks is flanked by other rails over which the spray booths travel, as shown in the accompanying pictures.

Traveling Booths Are Individually Powered

Each spray booth is in the form of a big arch or an inverted block letter U large enough to pass over a Pullman car. The 12-ft. length extends parallel to the car to be painted and is divided into two sections—a power unit 5-ft. in length and an operating section 7-ft. long.

The power unit contains a water-wash section through which overspray and fume laden air is cleaned and exhausted, the CO_2 fire protection storage tanks, exhaust fans, air compressor, air storage tanks (for spray painting) and motors which move the booth over the rails at speeds up to as fast as 25-ft. per minute.

The operating section has an elevator on which the spray man stands, operating controls whereby he can regulate both the direction and speed of the booth's travel, move the elevator (on which he stands) up or down for convenient spraying position, and four banks of enclosed fluorescent lamps set at correct angles to furnish plenty of light over the area being sprayed. At the end of this section, opposite the power unit, two escape doors are positioned one above the other, so that in the event of a fire the operator can get away through one of the doors and climb down a ladder to safety. This section also contains fully automatic CO_2 fire protection nozzles, explosion-proof electrical system, air pressure regulators and spray gun.

The pressure tank containing paint to be sprayed is placed on the elevator platform side of the operator. For spraying the outside of cars, only a 20-ft. length of hose is used. This arrangement has a number of advantages as compared with our former semi-down draft booths in which we had to use air and material hose at least 75-ft. in length to do the same work.

I have described one side of the arched spray booth. The other side of the booth is identical in construction, equipment and controls.

Exhaust System Functions Regardless of Booth Speed

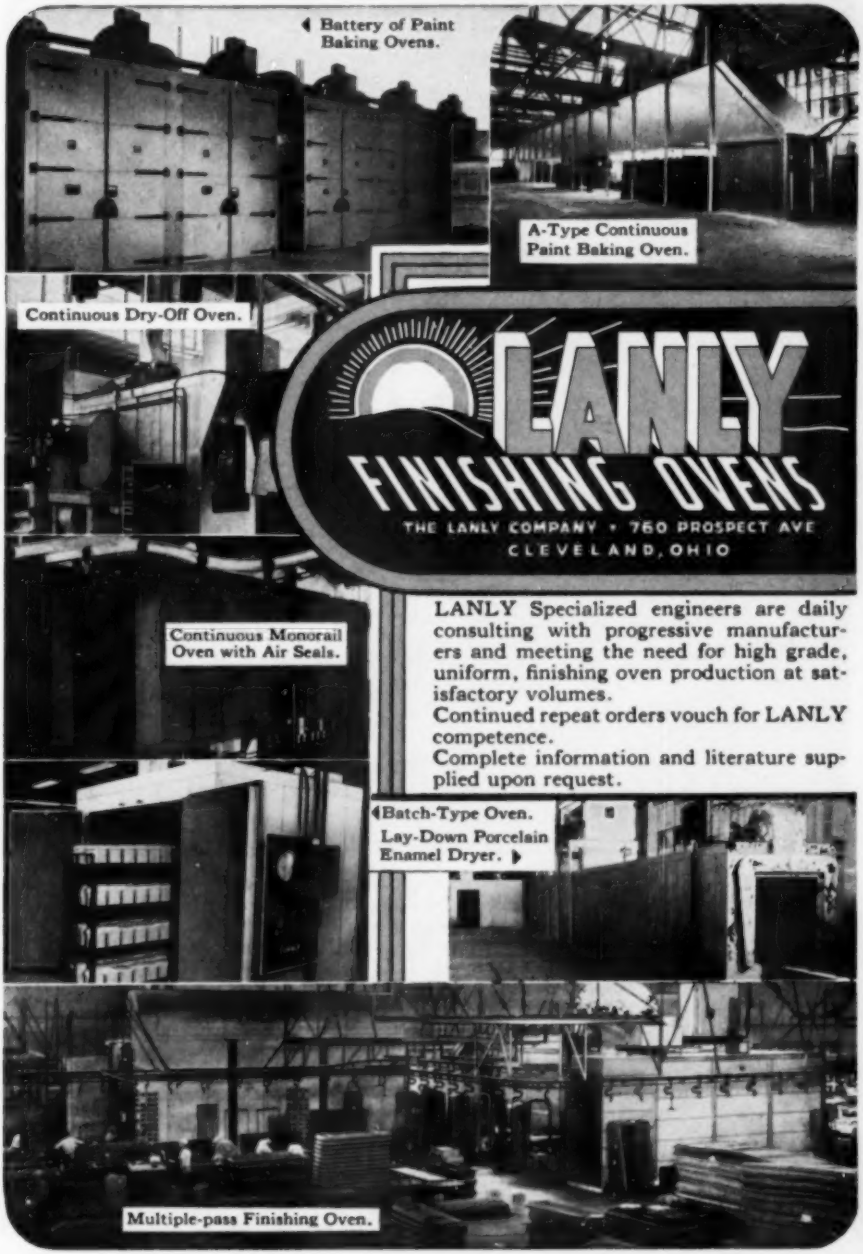
When the traveling spray booth straddles a car to be painted there is about 6-in. of clearance between the sides and roof of the car and the sides and top of the booth. The spray booth exhaust fans draw whatever fumes and overspray appear across this relatively narrow space, through the water wash chamber, and into a fixed duct system located at ceiling height above the center of the track, and extending the full length of the building.

The under side of the ceiling duct is composed of a series of louvres, the correct number of which are mechanically opened as the spray booth travels along. The exhaust air is forced out of roof stacks. The louvred ceiling duct has its own exhaust fans to force the washed exhaust air outside the

building. An air replacement unit, located on the roof of the paint shop, about the center of the building, replaces the air exhausted by both traveling spray booths—replacing it with properly tempered and filtered air.

Through this system we obtain an air velocity of 150-ft. per minute across the face of the booth, or

Here you see a Pullman car with its windows masked, in preparation for spray painting the roof and sides. An operator standing in each half of the traveling spray booth (here you see only one half) sprays paint as the spray booth travels the full length of the car.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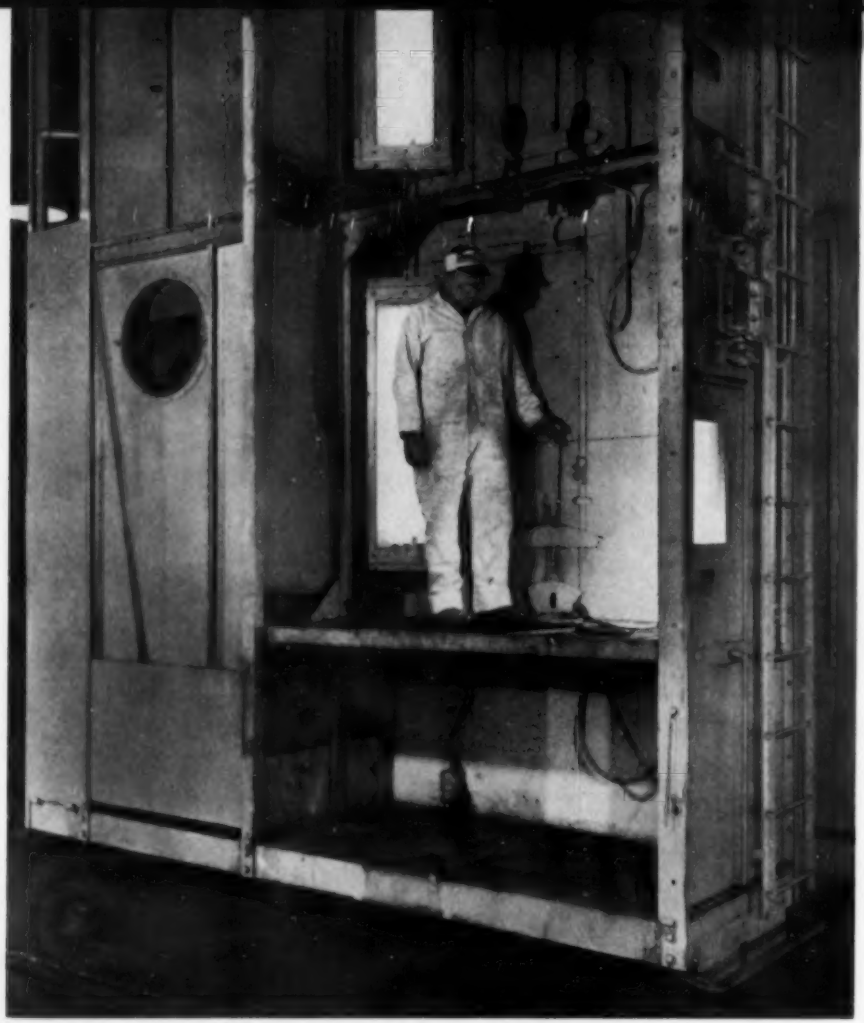


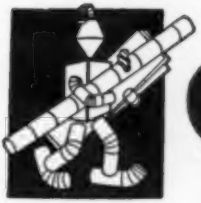
Close-up of an inside half of traveling spray booth. Spray man stands on elevator which he can position at convenient height for spraying upper portions of Pullman cars. At left, the circular opening receives extension exhaust piping that pulls fumes and overspray from interior of car, through a window, when interiors are being sprayed. Levers enable operator to control the direction and speed of booth travel and the vertical movement of elevator. Electrical controls for motors are located at end of the spray booth, beside the ladder.

in other words, past the operator, whereas in the semi-down draft booth we had an air velocity of only about 100-ft. per minute around the sides and top of the car.

This increase in efficiency of the exhaust system is of added importance in painting the interiors of sleeping cars. With the ever increasing number of roomette and bedroom cars, involving as it does many separate rooms, partitions and doors, the inside surface areas to be painted are increased many times, as compared with the older type Pullman cars. Greater exhaust

ELECTRICAL OVENS

LARGE or SMALL



- *Rack*
  - *Horizontal*
    - *Vertical*
- *Drawer*
  - *Portable*
    - *Conveyor*

or

Tunnel Drying Types

YOU CAN STAKE YOUR REPUTATION ON THIS OVEN!

Keep a sharp eye on finishing methods for you can stake your reputation on this oven. Excessive heat has been the "cost" of many jobs. Each Young & Bertke oven is designed for its particular job with temperature controls, circulating air fans and other special equipment for perfect finishing results.

Transformer and Armature coils for radio, television and electric motors are some of the many smaller items to which these ovens are specially adapted. A complete line for results in any industry—for any product—with value beyond expectation. UP GOES PRODUCTION—down go costs.

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- *Preheating*

The YOUNG & BERTKE Co.

OVENS • SPRAY BOOTHS • DUST and FUME CONTROL

2250 BUCK ST. • CINCINNATI (14), OHIO

efficiency is certainly needed to remove paint laden air while men are spraying roomettes and bedrooms. This is accomplished by inserting 21-in. pipe from both water wash sections of the traveling booth into windows at the center of the car. The metal doors, used to exhaust air through the water-wash section when painting the outside of the car, are closed tightly so that only air from the inside of the car is drawn through the water-wash section. Both end doors of the coach being painted are left open to supply fresh filtered air inside the car.

Booth Can Travel Length of Car in Seven Minutes

Specific data on the painting of railway cars will vary with the color of the paint used, the arrangement of colors, stripes and two-tone jobs. We use 20-ft. lengths of material and air hose for painting the outside surfaces and 75-ft. lengths of hose for car interior. The viscosity of the enamel is 20 to 24 seconds at 78° F., as measured with a No. 4 Durez cup. The paint is sprayed at 60-lbs. air pressure and 20-lbs. fluid pressure. Only air-drying paint materials are used.

For measuring the time for spray painting the interiors of cars, there is no yardstick because of the varied construction and arrangement of inside partitions and doors. However, time may be gauged for painting the outside of cars. For efficient paint spraying, the speed of the spray booth is set to travel the length of the car in seven minutes. This means that for painting a car in one color, five trips of the booth are required, making 35 minutes of elapsed travel time for the spray booth and two operators. The roof of the car is given two coats; the sides, vestibules, ends, steps, water tank casings and battery boxes, one coat.

Traveling Spray Booths Are Really Economical

There is no question that the traveling spray booths are more efficient, and offer many advantages over the semi-down draft booths for our type of work. This has been proved in the saving of time as well as in the other economies which we have specifically shown in a comparative chart.

H. R. Sheaffer Joins Staff of Metals Disintegrating Co.

H. R. Sheaffer has joined the staff of Metals Disintegrating Co., Inc., Elizabeth, N. J., manufacturer of metal pigments, metal powders and metal abrasives.

In his new post as Manager of Pigment Development, Mr. Sheaffer will devote his time to development and sales work in connection with metal pigments, particularly gold bronze powders, in which he has a rich background and experience.

Mr. Sheaffer was previously Executive Vice President of two other bronze powder companies in Ohio and New York.

Earle G. Sederquest Dies

Mr. Earle G. Sederquest, Vice President of Burgess, Fobes Co., Portland, Maine, died in that city on Dec. 13.

Readers of "Industrial Finishing" may remember Mr. Sederquest's several published articles on the subject of Tumble Finishing small wood turnings and other wood items. We considered Mr. Sederquest an authority on this subject and reprinted some of his more recent articles. He was with the company in Portland for 27 years.

Finish Any Metal with *UNI-VERSAL PRIMER* and then perform all normal Drawing and Forming Operations

Now, here's an unusual plastic-base coating that anchors itself to hard-to-finish materials with such firmness and flexibility that all normal drawing, blanking or extruding may be performed without disturbing the finish. UNI-VERSAL PRIMER makes a perfect base for conventional top coats, or, used alone, provides unusual resistance to salt spray, humidity, abrasion, solvents and tarnishing.

Equally important is the drying speed: It air dries in only 15 minutes, ends baking operations, speeds up production and saves precious floor space.

UNI-VERSAL PRIMER may be the answer to your difficult finishing problems. Get a free working sample for tests on your own products—just write.

Complete Research Facilities AT YOUR SERVICE

If you are faced with a special finishing problem, the United laboratory will gladly assist in finding a solution. These research facilities are always at your service to help make a better product.

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United LACQUER MFG. CORP.

LINDEN, N. J. PHILADELPHIA 19, PA.

What Color Walls?

IN RECENT YEARS, there have been confusing claims about interior painting — mostly revolving around the psychological effects of certain color schemes.

Now, red may be "exciting" and green may be "tranquil" and blue-green may be "cold"; but we believe it's more important to paint for better seeing conditions. This means to have ceilings reflect 80% to 85% of the light striking them; walls 60% to 70%; work area 35% to 50%; and you can accomplish this with colors that you and your employees enjoy and like.

These are the recommendations of lighting engineers, and are the basis of Tremco's "Contrast Control" method of interior painting—a modern, simplified, practical system. You can prove it with a light meter.

You can test-paint one room, or one factory bay, at small cost, and prove to yourself the positive benefits of "Contrast Control" in relieving eye strain, and promoting efficency and morale.

One color scheme that is featured as a good example for avoiding eye-strain and fatigue, inside a factory, is as follows: Ceiling, white; walls from ceiling down to within about 42-in. of the floor, light green or light blue-green (not a mustard green). Walls from floor up about 42-in., a darker blue-green.

The wall color of green could be graduated, being medium dark at the floor line and gradually (or in wide bands) becoming lighter as it approaches the white or off-white ceiling.

Floors are light gray with yellow lines to mark aisles. Machines are light gray or light brown in color—or light gray tinged lightly with a light tan effect. Electric switch boxes, starters, are painted red.—*Tremco.*

REPRINTS AVAILABLE

"COATING THE SURFACES OF PRODUCTS BY DIPPING"

as published in the November, 1952 issue of this magazine.

PRICE 10 CENTS PER COPY— Stamps Accepted.

INDUSTRIAL FINISHING Magazine

1142 N. Meridian, Indianapolis 4, Ind.

Tool Engineers Meeting in Detroit, Mar. 17-20

Increased productivity and cost reduction—two vital factors in the economic success of America's industrial program for many years to come—will be emphasized in the technical sessions at the 21st Annual Meeting of the 23,000-member American Society of Tool Engineers to be held in Detroit at the Hotel Statler from March 17 to 20, 1953.

The 21-paper technical program, one of the most comprehensive in the Society's history, covers many new fields in which tool engineers are now actively engaged. According to L. B. Bellamy, National President of the Society, these broadened interests by tool engineers have come about as a direct result of the increased productivity and lower cost that can be achieved by injecting production know-how into fields related to tool engineering. Among these fields are product design, metallurgy and cost control.

Consulting Services Expanded

Dorian Shainin, formerly chief inspector of the Hamilton Standard Division, United Aircraft Corp., and Franklin E. Satterthwaite, Ph.D., previously quality control engineer and statistical consultant of the General Electric Co., have joined Rath & Strong, Inc., industrial consultants.

With these additions to the staff, Mr. Rath announced the growth of his firm's consulting services in the scientific use of quality control and statistical engineering to improve industrial operations of wide scope.

Rath & Strong is well known as consultant to industry throughout New England, the South and other sections of the country

Cashmere Mahogany

Photograph courtesy of J. D. Bassett Mfg. Co. Division of Bassett Furn. Industries.

▲

The world's largest manufacturer of bedroom and dining room furniture is celebrating its 50th Anniversary.

We are glad to have had a part in the designing and creation of finishes for our customer through the services of our specialized technicians who are experts in "originating"— not imitating — distinctive finishes of character.

The future of our company, as in the past, shall be based on service plus highly technical skill and increased manufacturing facilities, which will enable us to serve the furniture industries' needs better than ever before.

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HEADED FOR A FROSTY FUTURE...

Product finishes must be individually formulated to meet the exact requirements of each finishing line. Glidden "custom builds" industrial paints.

That's why Deepfreeze Division of Motor Products Corporation—a leading freezer manufacturer—uses Glidden Nubelite Enamel *exclusively* for interior liners and exterior shells of its new upright home freezers.

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SOME ACCESSORIES THAT CAN REALLY

Improve Your Spraying

BY H. H. CONNELLY

TODAY YOU can walk into a modern finishing department or paint shop and discover spray gun accessories that you never dreamed existed. Surprisingly enough, unlike the gadgets a dealer insists on selling with a new automobile, these devices have been developed to take care of some particular finishing need or problem.

Why a Fluid Strainer is so Desirable at Gun

An example that comes to mind first is the fluid strainer attached to the fluid inlet of a spray gun. It was developed at the request of a concern that had trouble with partially oxidized material clinging to the walls of the fluid hose and fluid containers; or foreign particles that slipped into the tanks when they were refilled. Since it is attached directly to the spray gun, it serves also as a spray gun fluid inlet extension, another handy device for bringing the air and fluid connections together at the handle of the gun.

The strainer is easily removed for cleaning and you will be surprised after a week's operation, at the accumulation of dirt that has been prevented from going onto the work.

Quick Detachable Connectors; Paper Paint Cups

Another noteworthy improvement that will save you money is the quick-detachable connectors for fastening air hose to spray guns. This type of connection has found receptive favor where multiple colors are sprayed, involving the use of several spray guns. The connections, easily and quickly disengaged, make possible the use of one air hose for any number of spray guns.

These accessories, properly used, assure you clean spraying and more rapid color changes. One of them indicates what the air pressure actually is at the gun used for spraying material.

If you are using a suction-feed cup gun for small production and are bothered with changes that necessitate frequent washing of the containers, try using disposable paper paint cups as inserts or liners. These paper cups are designed to fit snugly into the glass or metal cups and, when tightly closed, it is

Automatic Electric Spray-Bake Coating Machine

Pays For Itself In Regular Production Within 3 to 6 Months

Here is a self-contained unit that cuts coating costs, boosts output and improves quality of finish. Many machines have been in satisfactory production operation for several years. List of prominent and satisfied users available on request.

It will accommodate pieces of from less than 1-in. diam. to over 12-in. diam., which require a high quality finish, such as shell noses, cartridges, weapon parts; also clocks, pens, pencils, door knobs, etc. Positioned on work holders, pieces are automatically sprayed, travel on through a drying chamber for solvent evaporation, and then into electrical strip-heated bake oven from which they emerge for a brief cooling period before being removed.

Recommended for speedy, high quality production, and exceptional savings in coating pieces of various sizes and shapes that are difficult to handle.

Let us make a test run of your own work samples—for time study and cost analysis—no obligation.

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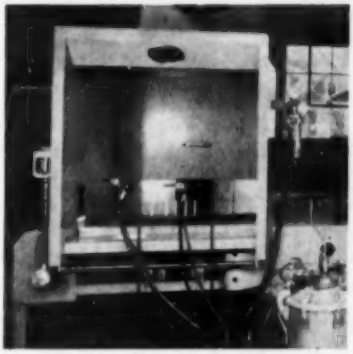
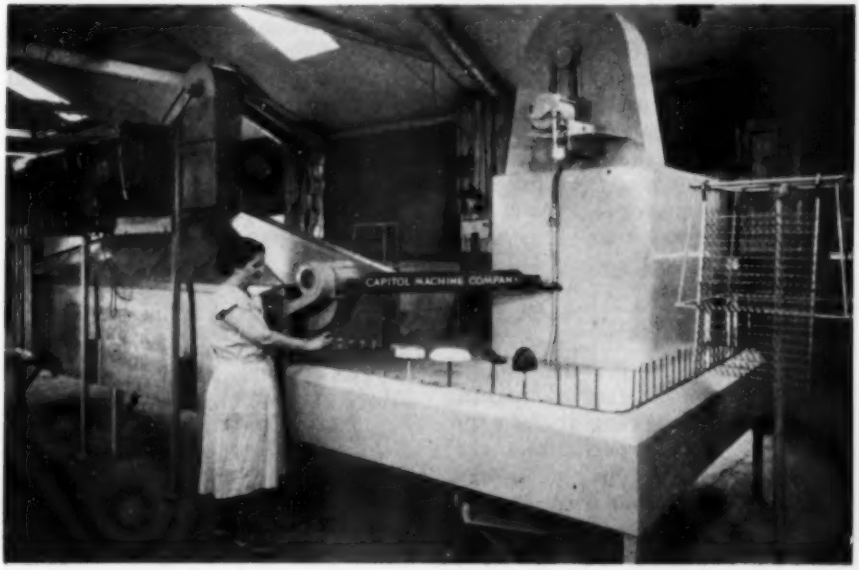


View of booth showing automatic spray guns — lower view shows conveyor arrangement and drying and baking compartments.



impossible to spill the fluid into the regular container. Once a paper cup is used for a particular color, it can be washed out and reused for the same color, or thrown away. This disposable container or liner has found favor with companies that use a variety of colors for decorations, such as the stencil process.

Pressure Gauge at Gun Reveals True Conditions

Another handy device worth mentioning is the spray gun pressure gauge. This is no more than a conventional type of air gauge which has a special mounting for attaching it to the handle of the gun. It gives the operator a constant check on the air pressure at the point of entering the gun.

It is not uncommon for the air pressure to be read as 60-lbs. on the transformer, whereas it is still not over 40-lbs. at the point of gun entrance. Because of this difference in air pressure at these two points, a spray gun is often blamed for improper performance, or perhaps an accusing finger is pointed toward the material that is being sprayed.

Next time you analyze a finishing problem of orange peel, heavy center pattern, or other defective spray pattern due to low air pressure, attach one of these simple gauges to the spray gun for analysis of the condition of your compressed air at the point where it is being used.

Several months ago, a finishing foreman was worrying about a discouraging orange peel effect that was showing up on the lacquer finish of novelty furniture. He immediately checked up with the operator.

"Raise your gun pressure, Joe", he said, approaching the spray booth.

"It's up to 70-lbs. now, Cap", he was told. He looked to be sure. It was. He couldn't believe his eyes. The air pressure at the gauge was increased to 90-lbs. before a satisfactory spray pattern was reached.

The foreman was flabbergasted. Whoever heard of a pressure of 90-lbs. of air being used for breaking up lacquer? He immediately jumped on the material; it must be wrong. As far as he knew, nothing had been changed except a drum of lacquer.

Air Pressure Drops in Lengthened Hose

What he didn't know was that the operator, the day before, had placed an extra 15-ft. of air hose on the gun to reach a job farther away from the spray booth, and had not removed the extra section of hose when the job was finished.

The operator had never heard of pressure drop. He didn't know that air pressure at the spray gun end of a ¼-in. hose 15-ft. long will measure 22-lbs. less than the 90-lbs. indicated on the transformer. This loss increases with hose length to such an extent that a ¼-in. hose 50-ft. long will register more than a 39-lb. drop.

Of course, the larger the hose, the less the drop. For instance in a 5/16-in. hose, using 90-lbs. regulated pressure, the drop is only 8½-lbs. for 15-ft.; and on a 5/16-in. hose, 50-ft. long, the drop is cut to 16-lbs.

For the reasons just explained it is desirable to know, at all times, the actual air pressure at the spray

Eliminate "Heavy Overtime"

PEEL SPRAY-BOOTHS CLEAN WITH LIQUID ENVELOPE

Good men are hard to get today. Why waste their time and your money—on the "jack-ass labor" job of scraping down spray-booths? Keep your booths clean, firesafe, better illuminated, better ventilated by using "LIQUID ENVELOPE".

Simply spray on with your regular spray-equipment. When overspray accumulates, break film and peel off in great big sheets. Takes only a few minutes for a 12 x 12 booth. Actually costs less than the hand-labor way. Order a 5-gallon Test Sample (Drum Lot Price on test-sample order!)

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The Plastic Paper Co., Los Angeles, Calif.
C & H Supply Co., Seattle, Wash.
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gun end of the hose. If a spray gun pressure gauge had been attached, the foreman would have realized immediately the cause of the trouble. Further, there wouldn't have been any trouble, for the operator would have adjusted his working pressure according to the gun gauge instead of at the transformer.

Still another device that soon pays for itself in use, is a hose cleaner. By forcing a mixture of air and solvent through the liner of the fluid hose, the latter is quickly and economically cleaned of material and readied for the next operation. Hose life is increased and, by keeping the liner clean, the sprayed finish is kept clean.

Capitol Machine Co. Elects New Officers

The Board of Directors of the Capitol Machine Co., Danbury, Conn., well-known manufacturer of the Electric Spray Bake Machine and the Camaco Electric Air Hot Spray Unit, elected H. Frank Taylor president at its year-end meeting. Michael Baldasare, manager in charge of engineering and production, was elected to the office of vice president.

Mr. Howard F. Taylor, founder and former president, will retain his active interest as a consultant and executive advisor.

Safety Solvent Firm Expands Distribution

According to John B. Moore, President of John B. Moore Corp., Nutley 10, N. J., warehouse stocks of the company's safety solvents have been installed in Pittsburgh, Penna., and at Detroit, Mich. Production of the company's solvent products is at Clifton, N. J.

The Moore Corp. also announces the appointment of representatives as follows: For Western Pennsylvania, West Virginia and Western New York State, Norman M. Gottfried of Pittsburgh, Penna.; state of Michigan, The Caldwell Chemical Co., Inc., Detroit, Mich.; West Coast, Arthur K. Meyer Co., who will also manage the company's West Coast offices at 1206 S. Maple Ave., Los Angeles, Cal.

Oakite Representatives Hold Technical-Sales Conference

Field service representatives from the Canadian, Chicago, New England, New York and Philadelphia sales divisions of Oakite Products, Inc., manufacturers of specialized cleaning and allied materials, are shown in the accompanying picture as they gathered for a series of technical-sales meetings at the Roosevelt Hotel in New York City, December 8-10.

Featured at these meetings were new reports from Oakite research chemists, service engineers and technicians on the recent developments in cleaning and related procedures designed to assist industry in combating rising operating costs.

Similar conferences held in Hollywood, California, and St. Louis during November were attended by representatives from the Company's North Pacific Coast, South Pacific Coast, Southwestern and Milwaukee divisions, and from its Cleveland, Detroit, Midwestern, St. Louis and Southern sales territories respectively.

Oakite field service representatives in a meeting at the Roosevelt Hotel in New York City.

DeBURGH Patented "Close-Pack" SPEEDS Drying...CUTS Unit Cost!

Engineered and Built by Koch

●LABOR SAVINGS ALONE PAY FOR COMPLETE SYSTEM

Declare yourself in on the tremendous advantages a DeBURGH Complete Finishing System offers your plant.

"Close pack" at drying, flow-out and cooling stages effects savings of floor space and dryer and heater size — savings often great enough to pay for the entire system in 12 months or less!

Whatever your production rate — whether 25 or 2500 pieces per day — whatever your present finishing problems, let KOCH engineers show you how a DeBURGH Complete System can save you money and make you money!

Get the facts now!

Phone, Wire or Write Today!

GEORGE **KOCH** SONS, INC.

EVANSVILLE, INDIANA

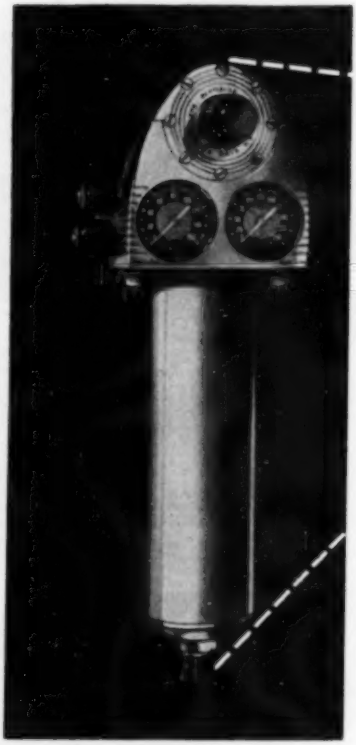
New DeVilbiss

unmatched for CAPACITY,

Now you can eliminate the ruinous surges and drops in air pressure that raise hob with fine finishes. Power regulation, exclusive with DeVilbiss, reduces and cushions air line pressure fluctuations to assure uniform spray gun operation.

This new DeVilbiss Type P-HLD Air Transformer not only thoroughly filters the air without cotton packs or metal filters, which require frequent replacement or cleaning – but it also delivers 100 cfm of air (capacity enough for 4 to 10 spray guns).

This new transformer is a further refinement in the complete DeVilbiss line of balanced spray equipment. It is an ideal partner for scientifically lighted and ventilated DeVilbiss spray booths, lightweight, easy-to-handle spray guns, air compressors, paint tanks, hose and connections. Your local DeVilbiss jobber, our branch office or factory will be glad to give you complete details.



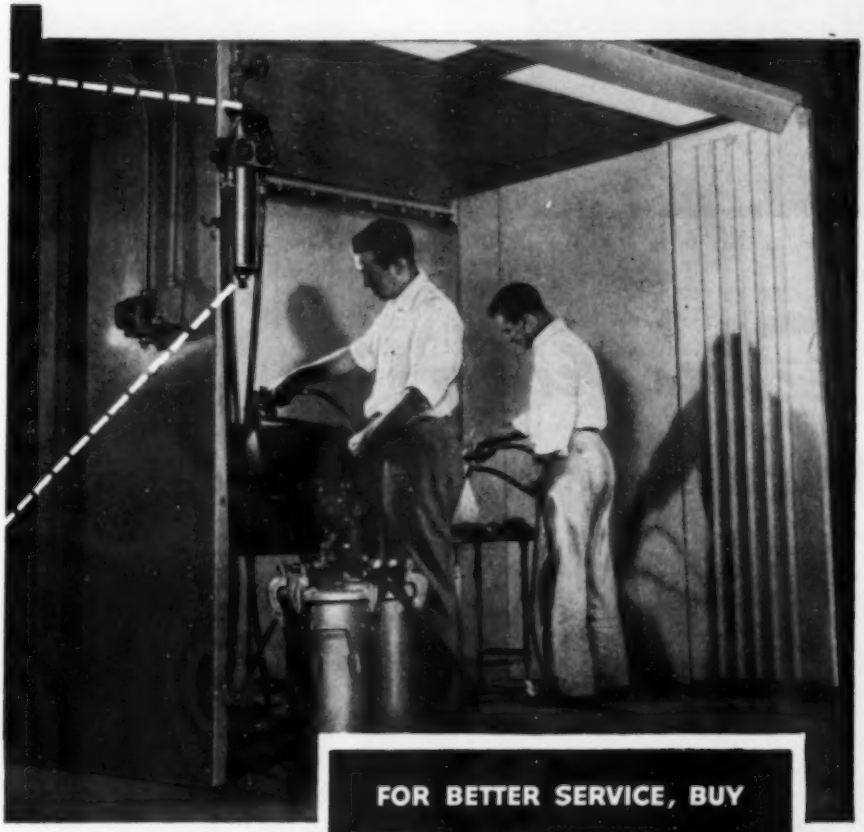
Write for Form D-137 which gives full specifications for DeVilbiss P-HLD Air Transformer.

THE DEVILBISS COMPANY
Toledo, Ohio
Windsor, Ontario • London, England • Santa Clara, Calif.

BRANCH OFFICES AND DISTRIBUTORS IN PRINCIPAL CITIES THROUGHOUT THE

Air Transformer

CLEAN AIR and PRESSURE CONTROL

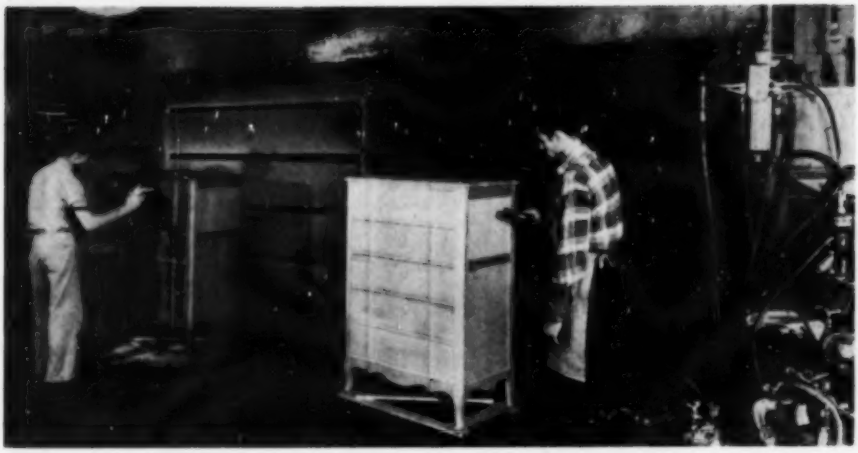


New DeVilbiss Air Transformer supplies uniform air pressure for production spray painting.

FOR BETTER SERVICE, BUY

DEVILBISS

UNITED STATES, CANADA AND THE WORLD



Spraying stain on furniture is the first step in producing our Nantucket maple finish.

Finishing Furniture and TV Cabinets

By ROBERT G. HOLLOWAY, Finishing Foreman
Inman Furniture Company

WE MANUFACTURE a variety of cherry and maple furniture, as well as mahogany and oak TV cabinets. At present we are using a total of ten different colors. Considering the different species of wood, and the various systems employed to get the desired results, one might think that confusion would result. Probably there would be some difficulty if it were not for the fact that all finishing room workers are fully informed, not only on production control, but on our different finishing systems.

Production Control Board; Printed Finishing Systems

All finishing room employees have a complete picture, every day, of what pieces to expect, what pieces are received and the number that are finished; and they get printed instructions on the various systems used. Nothing is left to

question or doubt. The production control board and finishing system instructions are located on a wall near the drinking fountain. The control board shows the suite or TV cabinet number, order number, total number of pieces on order, number received in finishing room and number completed. A color sample panel of each suite or cabinet is hung at the bottom of each column. Entries are made on the control board at noon and at the close of each work day.

Workers Always See How Finished Job Should Be

Step by step instructions for each finishing system are printed and framed under glass. This includes each operation, type and number of the correct stain, glaze and sanding operations—specifying the grit of paper to be used; also the rubbing compound and polishing wax. Included, too, are sanding, highlighting, rubbing and polishing.

To complete the picture for all finishing room employees, dummy fronts of chests, buffets, etc., for each suite and cabinet—correctly finished according to specifications—are strategically located at the stain, glaze and highlight booths, and in the rubbing and polishing rooms. These fronts are visible evidence of the results we strive for, and the results we get. I have found that employees who are well informed in what they are doing take more interest in their job, and they require less supervision.

Nantucket Maple; Details of Finishing Technique

I shall give you an example of our Nantucket maple finish used on bedroom, dining room and occasional furniture. Of course, some individual suites will vary somewhat from this system because of the design.

First, we sap stain; this is followed by a spray coat of light brown

Production control board at left shows what will be delivered in finishing room, what has been received, and what is completed. Various finishing systems in detail are framed under glass, indicating the suites or cabinets to which they apply . . . and pictures of all suites.

NGR stain, with a small amount of white shellac added. After an air drying period of one hour the piece is antiqued, using No. 4/0 steelwool and No. 7/0 sandpaper to lighten the stain in corners, on edges, etc. The addition of shellac to the stain aids later in the sanding. Next a wet wash coat of lacquer sealer is sprayed on. This wash coat dries for about two hours, after which the surfaces are thoroughly sanded with No. 7/0 sandpaper. Blow-off and tack rag operations follow.

Next, pieces receive a spray coat of glaze which is an oil-base material. This wet glaze coat is highlighted with a brush or cloth to get the desired effect. An air drying period of four to six hours follows before the first top coat of 21% solids lacquer is applied. The first coat of lacquer dries for six hours before the second top coat of the same clear lacquer is sprayed on.

The furniture is placed in a well ventilated drying room where the heat is kept at 110° F.; furniture remains here overnight. Tops and fronts are hand rubbed with No. 360 wet-or-dry sandpaper and rubbing compound, using rubbing oil and mineral spirits as a lubricant. Clean-up and wax polishing follow. After final inspection, the products are moved into the packing room.

Progressive Inspection

You may be wondering why we do not have more inspection stations. Well, each successive spray operator and those workers who do the sanding and rubbing—all have been trained, not only for their particular production job, but as inspectors. It has been fully explained to them, and they are convinced

(Continued on page 66)

Pre-rubbing tops and fronts of cabinets. Far to end of line are burn-in and color patchers.

PERFECTION FURNITURE FINISHES

contain none of the conventional stearates or flattening agents but are flattened by synthesis giving a waxed effect and a hand rubbed appearance.

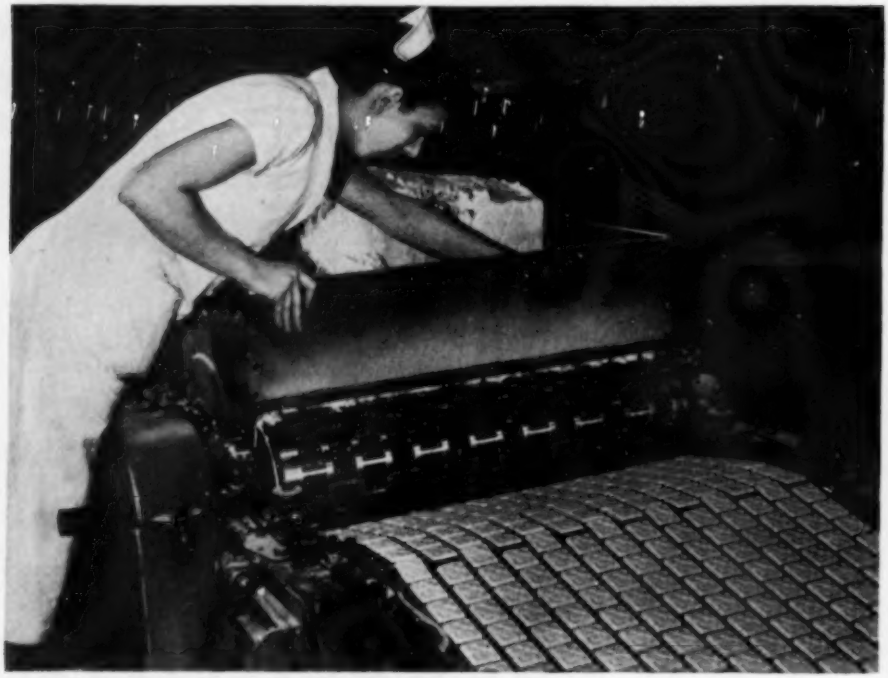
Outstanding advantages of PERFECTION FLAT FINISHES are . . . CLARITY OF GLOSS LACQUER EVEN IN LOWER SHEENS . . . SMOOTH . . . WON'T HAZE OR SWEAT BACK . . . WATER PROOF . . . LIQUOR PROOF . . . GRADES SUITED TO BUDGET AND DRYING TIME.

WRITE FOR SAMPLES

SEE THE DIFFERENCE FEEL THE DIFFERENCE

Perfection PAINT & COLOR COMPANY

INDIANAPOLIS 2, INDIANA



METAL-CYLINDER "COOKIE ROLLS" like this one turn out an endless parade of clean-cut cookies when molds are coated with TEFLON Finish.

HUNDREDS OF FEET UP on a bridge, painters work swiftly with DULUX Metal Protective Paints. DULUX has given up to 15 years of protective service on exposed structural steel.

FAMOUS QUALITY DUCO Lacquer and DULUX Furniture Finish on fine pieces put a gleam in the customer's eye . . . have helped furniture retailers clinch millions of sales.

Cookie molds with TEFLON finish make a better impression

Du Pont's new TEFLON polytetrafluoroethylene finishes have a unique quality: *practically nothing will stick to them*. This property—plus its chemical inertness and extreme resistance to high and low temperatures—is helping industry reduce production costs and save labor.

A bakery in New Jersey had a problem in the production of intricately designed cookies. The cookies often stuck in the molds on the "cookie roll," or dropped out in pieces. To keep the designs clear the molds had to be cleaned often—a careful, time-consuming chore. Then the rolls were coated with Du Pont TEFLON. Now the cookies always drop out cleanly and carry a sharp impression. There are almost no rejects.

Another bakery installed a forming roller finished with TEFLON to handle dough in making of fraction-of-an-ounce oyster crackers. The day after the roller was put in, production increased 1,500 pounds.

Du Pont TEFLON finishes have many other important industrial applications; they are among the 12,000 formulas for Du Pont Finishes at work in industry today. If you want to cut production costs, or make a product sell better, work better, or last longer, contact the Du Pont Sales Technician in your area or write to E. I. du Pont de Nemours & Co. (Inc.), Finishes Div., Wilmington, Delaware.

Du Pont Industrial Finishes

Chemically engineered to do the job *better*

DU PONT

REG. U. S. PAT. OFF.

Better Things for Better Living
. . . through Chemistry

DUCO AND DULUX ARE REG. U. S. PAT. OFF.

that it is useless to continue operations on any piece of furniture or any TV cabinet that has been scratched or damaged in any way—or, in fact, any piece with a faulty finish. As a result, we have almost continuous inspection. Our employees are encouraged to set aside any piece for correction or repair as soon as they see it.

Mahogany TV Cabinet Finish

I have selected one model of mahogany TV cabinet for discussion because I believe you will be interested in the finishing system used. On this particular cabinet we build the color and finish, starting with the stain coat rather than to depend on any subsequent shading to get the desired finished effect.

As in the case of furniture, sap staining is the first operation; then comes sealing of the end wood grain around the front and side molded edges of the top. This is done so that stain and filler absorption will not cause the end wood grain to become too dark. All solid wood parts are spray coated with a brownish red NGR stain followed by a spray coat of red mahogany NGR stain, with a small amount of white shellac added over the entire cabinet, including solid wood parts. Cabinets then dry overnight.

The doors of these cabinets have been filled, sealed, sanded and given a bonding coat before the attractive wood grain decal is rolled on. The doors are hung on the cabinets with the protective paper facing attached. This paper remains intact on the doors until after the filling and clean-up operations have been completed.

Cabinets are scuff sanded with No. 7/0 sandpaper before filler is sprayed on all surfaces. We prefer to pad-in the filler by hand, and then clean the surface thoroughly. Again, cabinets air dry overnight. Next a 21% solids lacquer sealer is sprayed and allowed to air dry four hours before the surfaces are sanded with No. 6/0 sandpaper; we use portable air sanders for this work. After the blow-off and tack rag operations, the first top coat of 18% solids lacquer is sprayed on. It is allowed to air dry for six hours.

We Pre-Rub the First Coat of Lacquer

Right here is where we depart from the usual finishing procedure. Cabinet tops and fronts are pre-rubbed by hand, using No. 320 wet-or-dry sandpaper with mineral spirits to which 2-oz. of linseed oil per gallon of spirits has been added as a lubricant. The surfaces are thoroughly cleaned with a water-soluble cleaner. At this point all cabinets pass through an inspection station. Cabinets that need any touch-up patching are sent to the burn-in or color patchers. Then the second top coat of 18% solids clear lacquer is sprayed on, and the cabinets are moved into the dry room for overnight drying.

Again, at this point, cabinets are subjected to one of two courses of finishing procedure. One course is the usual procedure of hand rubbing with No. 360 wet-or-dry sandpaper, with compound, using a mixture of rubbing oil and mineral spirits as a lubricant; this is followed by a cleaning up and hand polishing with wax. [*To page 68*]

STAINS GLAZES

LACQUERS
SEALERS
FILLERS
ENAMELS
UNDERCOATS
SHELLAC
•
SPECIALTY
FINISHES

For Application by All Methods

•

Stains and Glazes to produce all modern or traditional colors with rare attractiveness. Specially formulated to give easy application with quick, dependable drying.

Industrial Finishes in Step with the Times

JAMES B. DAY & CO.

CHICAGO 14

On those cabinets that are to be flow coated, the second top coat of lacquer is wet sanded with No. 360 wet-or-dry sandpaper, using mineral spirits only as a lubricant. No oils or compound are used. Then the surfaces are thoroughly cleaned; these cabinets are given a thin wet coat of 6% solids clear lacquer. This flow coat dries almost immediately, but to avoid any chance of printing, all cabinets are dated and banked overnight. The following day, each cabinet passes through final inspection before it is packed for shipment. This method gives excellent results.

Ames Speaks at Bridgeport Meeting of A.E.S.

The Guest Speaker at the November meeting of the Bridgeport, Conn., branch of the American Electrotypers' Society was Mr. B. F. Ames, General Sales Manager of the Maas & Waldstein Co., Newark, Chicago and Los Angeles, manufacturer of industrial finishes.

The topic of Mr. Ames' discussion was "What's New in Organic Finishes." He outlined what, in his opinion, are the advantages and disadvantages of synthetic coatings, which included Epon resin, Phenolic resin, Alkyd resin, Styrenated resin, Urea resin and Urea modified melanine.

He also pointed out the advantages and disadvantages of vinyl coatings as well as the cellulosic which embraces ethyl and nitro cellulose.

Mr. Ames concluded his address by giving detailed technical data about "Plextone," his company's new multi-colored enamel. It was pointed out that "Plextone" retains its individual color identity; even when black and white are mixed together, the resultant colors remain black and white color particles and not what would be normally expected—gray.

At the conclusion of Mr. Ames' speech there were many questions and answers.

Left to right: John Mallick, General Electric Co., Bridgeport; Robert G. Parker, Casco Products Corp., Bridgeport; B. F. Ames, Maas & Waldstein Co.; Raymond W. Goral, Enthone Inc., New Haven; Floyd M. Erlenmeyer, Maas & Waldstein Co.; George C. Wagstaff, Lock City Electro Plating Co., Stamford; Virgil S. Consalvo, General Electric Co., Bridgeport.

Lawrence W. Bass Joins With Arthur D. Little, Inc.

Dr. Lawrence W. Bass, nationally prominent industrial research executive, has recently become associated with Arthur D. Little, Inc., leading consulting research and engineering firm, according to an announcement by Earl P. Stevenson, President of the Cambridge, Mass., organization. In making the announcement, Dr. Stevenson added that Dr. Bass will be primarily concerned with the increasing client demand on the Arthur D. Little, Inc., staff for consultation on the effective organization and management of industrial research activities.

Dr. Bass brings to this work an extensive and diversified background in research management, gained while serving for over 20 years in an executive capacity on the staffs of several well known industrial concerns and research organizations.

William L. Foy Elected to Board of Directors

William L. Foy, head of Research for the Foy Paint Co., Inc., Norwood, Ohio, was elected to the Board of Directors of the Foy Paint Co., Inc., at the annual board meeting held December 16 at the Gibson Hotel in Cincinnati. Mr. Foy fills the vacancy left by Mr. William F. Rehme who has retired after 48 years of service with Foy Paint Co.

ADHESION

In the finishing industry "beauty has to be more than skin deep" . . . it has to last and last and last. Beauty and Adhesion are the true tests of any finish and this combination in Reliance finishes has long been a recognized quality among many of the country's leading manufacturers. If you have a finishing problem we would welcome the opportunity to help you solve it.

FREE — a request on your company letterhead will bring you your copy of this helpful booklet. Write 4732 Crittenden Drive, Louisville, Kentucky.

Rely on Reliance

RELIANCE VARNISH CO., INC.

AFFILIATED FACTORIES IN

LOUISVILLE, KY. BRIDGEPORT, CONN.
CHICAGO, ILL. ASHEVILLE, N. C.

Mechanized Finishing

In November 1952 issue, page 116, you had an editorial entitled, "Mechanized Finishing Offers Many Possibilities". The amount of finishing has been very small with us but we may add some items so that the dipping should be mechanical. Can you give us the names of firms to whom we might write to get some information and suggestions?—*M.W.Co.*

Replies—several of them—to your inquiry about "Mechanized Finishing" can be found in the advertising pages of this magazine. In a letter, we are giving you the names and addresses of a few concerns who can supply dip-coating equipment.—*Editor.*

Keeping True Color on Master Sample

In October 1952 issue of this magazine, in the "Question and Answers" section, I notice some interesting comments on the above subject.

For some months, work has been under way in our laboratory which indicates that certain chemicals are able to minimize wood discoloration. It occured to us that this fact would be of interest to the person or company who raised the question. Our laboratory work has shown that Uvinul 490, when present in a nitrocellulose lacquer at a concentration of 0.5% (½ of 1%) of the lacquer solids, is an efficient screening agent of ultraviolet light. Test panels which have been exposed outdoors under glass (to prevent contact by moisture) are available which show that the wood surface beneath a typical unmodified nitrocellulose lacquer yellows appreciably. The wood surface beneath the same lacquer modified with 0.5% Uvinul 490 does not yellow and, in fact, maintains its original color.

Any additional information regarding the use of Uvinul 490 in nitrocellulose lacquers which might be of interest to you or your readers can be made available on request.—*R. F. Wint, Cellulose Products Dept., Hercules Powder Co.*

"Quality Control"

I would appreciate receiving a reprint of the article entitled, "Why and How to Set Up and Maintain Quality Control", which appeared in the October 1952 issue of *Industrial Finishing*, pages 60-62.—*E.P.*

We have no reprints of this article but are sending you an extra copy of the complete magazine.—*Editor.*

Patching Procedures

Referring to the August 1952 issue of *Industrial Finishing*, we would like to make a distribution of the article, "Patching Procedures" over our mailing to Radio and Television Dealers and Service Technicians.

Do you have this article printed separately? If so, please quote the cost of 2500 copies, if available. If

Nacromer
A PEARLY PIGMENT
a smart finish
helps sell lamps
Now, lamp manufacturers have learned that Nacromer in lacquer adds a beautiful, permanent lustre. Easily colored with dyes, Nacromer adds to the appeal of any product made of wood, metal, or plastic —from refrigerators to toys, office equipment to sporting goods.
Nacromer adds a lustre almost comparable to natural pearl essence at a fraction of the cost. Test Nacromer now on your product. Write for full details and working sample.
the Mearl corporation
"World's Largest Producers of Pearl Essence"
153 Waverly Place
New York 14, N. Y.

these are not available, we would like to receive your permission for us to reprint this article for distribution as mentional above.—*Canadian G.E.*

We have no reprints of this article, but could have the quantity you name made up special. In a letter we are quoting prices on same.

If you prefer to have reprints made yourself, this is agreeable to us provided you include a credit line to the effect that the article was reprinted from August 1952 issue of *Industrial Finishing* Magazine, Indianapolis, Indiana, U.S.A.—*Editor.*

Paint Strippers

We would appreciate any information you might have on the latest and best types of automotive lacquer removers now on the market. We would like to know the trade names, the advantages and disadvantages and, if possible, the local distributors of said products. Have you any information on one remover, in particular, that is applied and several hours later the paint film can be removed with water and a stiff brush? We have heard of such a remover but do not know the name of it or any details concerning it.

Even though we do not encounter a large number of jobs that require stripping, we are still not entirely satisfied with the product we are now using, as it leaves a very tacky residue in all crevices and around weatherstrips, which is difficult to clean out. Any information you can give us will be greatly appreciated.—*S.F.B.*

"She's the hottest cold stripper I ever saw in action!"

Editor's Note: This inquiry came from one of the largest manufacturers of automobile bodies. In reply, the Editor submitted names and addresses of several manufacturers of wax-free paint removers and strippers. However, we would appreciate learning more details about products that will meet the requirements stated in this inquiry.

Tumble Painting Wood Parts

We are seeking information on how to get a colored finish on small wood parts by tumbling. If you have reprints of any articles on this subject, we would appreciate receiving them. If not, can you tell us where to get the information?—*I.S.C.*

With a letter we are sending you a reprint of an article on this subject.—*Editor.*

Paint Spray Masks

In December issue I notice that you have forwarded the names of two companies that design and make contour masks for spray painting colors on intricate work, one in Toledo and

for color retention on light finishes-here is

CRYSTAL CLEAR LACQUER

WATER WHITE

It's a new, time-tested material for preserving the original color of those beautiful grays, off whites, lime, pearl, sea mist, ermine and all pale, bleached and decorative effects so popular on furniture of today.

Crystal White Lacquer has excellent color retention, and it can be depended upon to protect the surface from the danger of discoloration due to exposure in the store or home.

A free working sample, together with finished wood panels showing the new colors, will be sent upon request. No obligation!

THE SCHAEFER VARNISH COMPANY

INCORPORATED

15TH AND MAGNOLIA LOUISVILLE, KY.

one in Grand Rapids. Would you please forward the names of these companies? We are interested in obtaining bids on some masks for work that we are spraying.—*N. P. Co.*

Information supplied.—*Editor.*

Synthetic Lacquer Sticks

Please advise where we can purchase synthetic lacquer sticks suitable for burn-in repair work on a high gloss finish.—*F.H.Co.*

In a letter we are naming two sources of supply.—*Editor.*

Heat Resistant Finish

We notice, on page 92 of November 1952 issue, that one of your subscribers is interested in a High Heat Resistant Finish for metal. The finish must stand about 600° F. and have high dielectric properties.

"We'll have to look further boys, for a heat resistant finish for those TV cabinets."

We have a material that will meet these requirements. It is our Vita-Var No. 13769 High Heat Resistant Olive Drab.

This material has been tested by Government agencies and we are sure it will meet the above requirements. This material can be supplied in other colors. It can be reduced for spraying, and air-dried or baked at practically any baking schedule.—*Vita-Var Corporation.*

Flock and Equipment

Will you please send me a list of companies that can supply information regarding flock, equipment, and some literature on various uses and finishes?—*D.H.,Inc.*

Information supplied by letter.—*Ed.*

Sealer Coat for Wood

Please advise the type of sealent you would recommend for a base coat prior to painting with aluminum on wood reels. The flanges of the reels are to be protected against the elements by the sealent prior to assembly and painting.—*K.A.&C.Co.*

In a letter we are naming several concerns who can probably supply just what you want.—*Editor.*

Clear Mask Coating for Fluorescent Lights

Can you recommend a liquid to be brushed or sprayed on glass guards for fluorescent lights in spray booths —one that will not hinder light transmittal but will facilitate cleaning of spray residue?—*A.B.Co.*

Your overspray should not be so great as to coat the lights for your

Mac's

FASHION FINISHES

LACQUERS — Available in clear and opaque, for application to surfaces of all kinds. Spread easily and give good coverage. Any sheen desirable. Attractive, outstanding finishes.

SEALERS — Ideally suited as first coat materials under clear gloss or flat lacquers. Give good body and sand easily. Also, work well under varnish and enamel! Try them!

VARNISHES — None better! Whether for dull, satin or gloss effects, Mac's varnishes will be found most economical and appropriate as finishing coats on low, medium and high priced goods.

STAINS — These are stains of distinction, with an established reputation for the highest quality. We've been making them since 1875. Mac's stains can be supplied for every need.

FILLERS — The Mac's Fashion line includes the more commonly used oil paste fillers as well as the quicker drying materials of recent development. Keep abreast of the times with Mac's fillers.

PRIMERS — Mac's Fashion primers insure full coverage and absolute protection as first coaters on metal, forming firm and lasting foundations on products subject to severe treatment and abuse.

ENAMELS — For wood, metal and other surfaces, air dry or bake. Mac's Fashion enamels, properly applied, stand up under all conditions to which painted articles are subjected.

WOOD BLEACH — Mac's Fashion bleach will bleach all kinds of wood including mahogany. Dries overnight to a definite bleached effect ready to sand, and ready for the regular finishing schedule. Samples on request.

THE LAWRENCE-McFADDEN CO.

Write for Production Test Samples

7430 STATE ROAD PHILADELPHIA 36, PA.

Headquarters for Finishes Since 1875

spray booth. If it is, you are either wasting an excessive quantity of material or have inadequate exhaust or ventilation at the spray booth.

However, in a letter, we are naming several concerns that supply liquid (sprayable) masking material.—*Ed.*

"It's an industrial finishing course I bought. It's given in Comic Book form."

Cleans and Phosphate Coats Steel in One Operation

Do you know a concern by the name of Jenolite Distributing Co. in Cleveland, Ohio? One of our salesmen believes he saw the name in *Industrial Finishing*, but cannot locate the copy in which he thinks he saw it. They apparently are distributors of a British development for metal-pre-treatment which cleans and phosphate coats steel in one operation.—*F.&Co.*

We find a concern by this name in Emeryville, California—but why seek a foreign product when several concerns in this country can supply excellent materials and equipment for doing the same thing? Nearly every issue of this magazine, for the past several years, has carried advertising and editorial articles dealing with the cleaning and phosphate coating of steel products before painting.—*Ed.*

Electric Conductive Paints

Will you please send us the name of the firm that manufactures electrical conductive paints?—*W.E.Co.*

In a letter we are sending you the names and addresses of three firms that sell a material of this kind.—*Ed.*

Dip-Coating Article

In a recent issue of *Industrial Finishing*, there appeared an article covering, in general, the methods and equipment for finishing by dipping (Nov. 1952, pages 58-77).

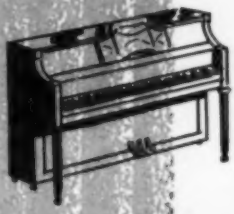
We are particularly interested in vertical dipping for lacquered finishes and any equipment for controlled vertical withdrawal of the parts.

We would appreciate your sending us any data concerning the foregoing, together with references to any other source which may shed further light on the subject.—*C.I. (Toys).*

In November 1952 issue, on page 74, you show a dipping machine. Can you give us the names of people who manufacture such equipment? We are interested in some type of mechanical equipment to take care of new items we plan to add to our line.—W. Co.

In letters of reply to the above, names and addresses of several manufacturers of dipping machines are given.—*Editor.*

For Finer Furniture Finishes



Use New "CL-17 Sanding Sealer"

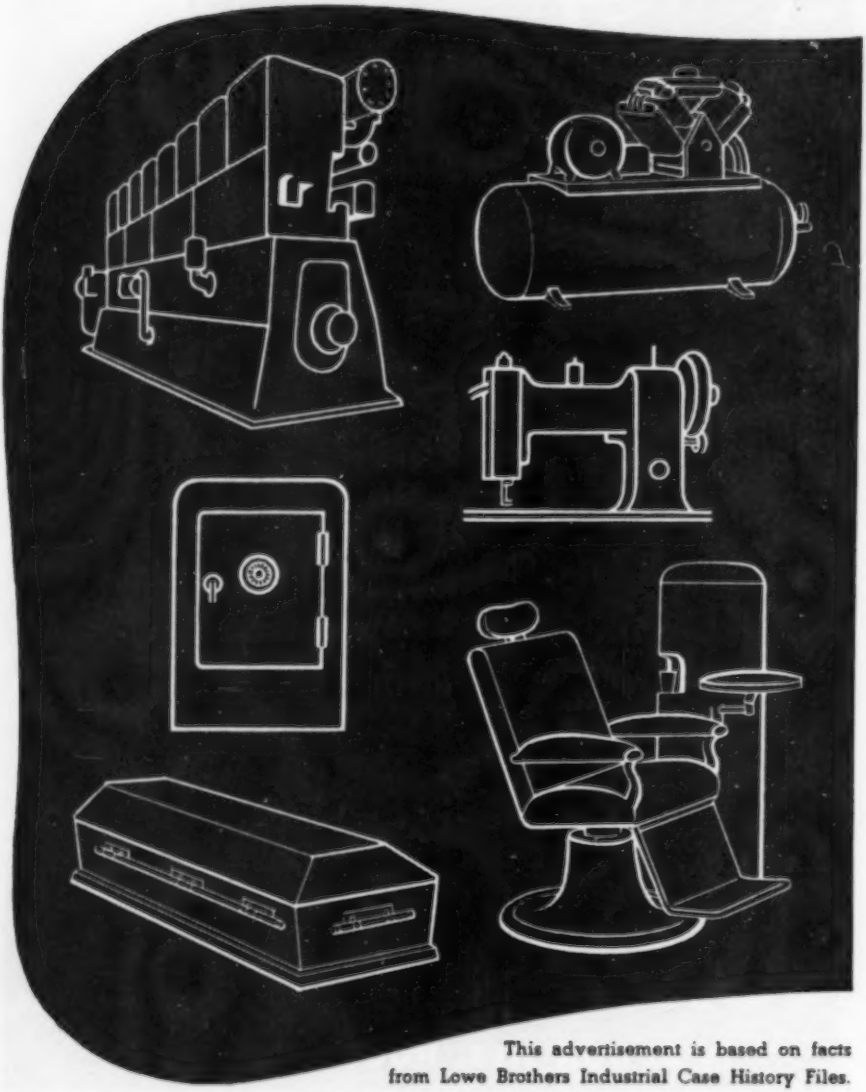
If you would like a better "hold out," plus a speed-up of your finishing system, use our new CL-17 Sanding Sealer. You'll be amazed at this product's performance. Why not ask us about a trial order?

CPL

COAST Paint & Lacquer Co. Inc.

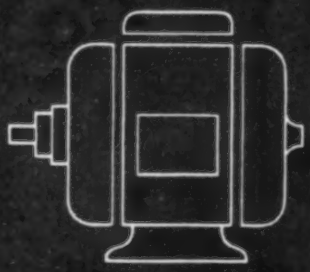
P. O. BOX 1113, HOUSTON 1, TEXAS

Finishing time cut 50%...
...another



This advertisement is based on facts from Lowe Brothers Industrial Case History Files.

sanding eliminated entirely! THERMO SPRAFIL true story



*Lowe Brothers Thermo Sprafil System puts new economy into the finishing of a wide variety of products including: motors . . . vaults & safes . . . diesel engines . . . dental equipment . . . sewing machines . . . metal caskets . . . air compressors . . . steam turbines . . . medical & hospital equipment . . . shoe machinery . . . laundry machinery . . . metal stitchers . . . beauty shop equipment . . . generators . . . electrical control panels . . . clothes pressing machinery . . . machine tools . . . many others!

A large motor* manufacturer, wanting to speed production and lower finishing costs, recently installed the new Thermo Sprafil system upon the recommendation of a Lowe Brothers "Finishing Specialist." Results: Overall finishing time on each motor has been cut in half! Thermo Sprafil has entirely eliminated need for sanding. Savings in labor and material costs have been effected accordingly.

Similar facts are being reported daily by other alert manufacturers who have put Thermo Sprafil into their finishing operations. They're all finding that it sprays on smoothly, evenly . . . air dries in 4 hours . . . bakes in one hour at temperatures up to 300° . . . always dries free from pin-holing . . . vastly reduces sanding time or completely eliminates need for it . . . provides a fine surface for finishing, even though the surface of the steel being used might not be up to usual standards of smoothness!

Why not check into Thermo Sprafil now? It may mean sizable savings in money and time for your particular finishing operation. A Lowe Brothers "Finishing Specialist" will be happy to discuss it with you. Write today.

THE LOWE BROTHERS COMPANY
DAYTON 2, OHIO
INDUSTRIAL DIVISION

LEADERSHIP THROUGH CONSISTENT SERVICE

Lowe Brothers
FINISHES FOR INDUSTRY

Bleached Mahogany Blisters

We have been having a great deal of difficulty in bleaching mahogany, in that we find the lacquer develops a few blisters. Knowing that many of the furniture manufacturers use mahogany extensively in a bleached finish, we are wondering if you can give us a source of bleaching material especially prepared for mahogany? It is our desire to use a bleach that would almost turn mahogany into a light blond color.—*B. R. Co.*

While blistering in lacquer finishes is a common occurrence in most finishing rooms, the cause of the trouble is sometimes hard to find and remove quickly. It can be caused by a number of things. However, most lacquer blistering is caused by trapped moisture in the pores of the wood.

Since your blistering trouble is on bleached mahogany, in all probability it is caused by the bleached surface not being thoroughly dry before succeeding coats of material are applied.

While you do not state what type of bleach you are using, I presume it is what is known as a standard bleach which includes No. 1 and No. 2 solutions. No. 1 is an alkaline solution and No. 2 is peroxide. Both of these contain moisture, especially the No. 1 bleach. Since it is necessary to apply from one to three applications, perhaps you are not allowing enough time for the bleach treated surface to dry.

I suggest the following method be used, as I believe it will stop the trouble if it is coming from moisture in the wood:

1) Apply bleach, allowing 30 to 45 minutes between coats (if necessary to bleach more than one time).

2) After one hour, sponge the entire surface with a neutralizing solution. Pure white synthetic vinegar makes a good neutralizer. If necessary, a 5% acetic acid solution may be added to the vinegar to assure a better neutralization of the bleaching solution.

3) Allow complete drying of bleached surface after rinsing with the neutralizer. A wet bleach will not only cause blisters in the finish, but the bleaching action may continue, thus causing a breakdown of the finishing coats later applied.

To get the best results, bleached woods should be air dried 24 hours, preferably if a temperature of 110° F. is maintained. If forced drying is used, the bleached surface should be allowed to stand one hour at room temperature; then follow with the neutralizing operation.

Forced drying heat shoud be 130° to 140° F., and maintained for at least one hour; then allow plenty of cooling time before starting the next operation which, of course, is sanding.

4) After the surfaces are well sanded, an air duster and stiff bristle brush should be used to remove all dust and bleaching residue from the surface and pores of the wood.

If these directions are followed, I believe you will have no blistering troubles caused by wet bleach.

A number of other things can cause blisters in top coats of lacquer. A few

new

National Air Sander

STRAIGHT-LINE ACTION...SINGLE PAD

FAST • LIGHTWEIGHT • VIBRATIONLESS

MODEL 600

$82.50

Here is National's new, powerful, high-production sander which weighs only 5 pounds but operates at 3200 rpm. Rapid stock removal is assured by the 5/16" stroke and 25 sq. in. of abrasive area. Either felt or rubber backing pads are available, and a built-in water spray makes wet sanding easy. National manufactures a complete line of block sanders, offering either orbital or straight line action . . . electric or air driven.

Write for further information today!

NATIONAL NS SANDERS

NATIONAL AIR SANDER, INC.

2820 AUBURN ST. ROCKFORD, ILLINOIS

of these are listed as follows:

1) The surfaces may not be allowed enough time to dry after a stain or toner coat is applied.

2) Wash coat may be too heavy so it bridges over small pores in the wood, thus preventing proper filling. These pores will open up when succeeding coats are applied, thus causing blistering and pin holes.

3) Sometimes the lacquer sealer and lacquer contain solvents that are "too slow", thus causing the filler to "lift" and cause blistering. Usually a little faster drying material will remove this cause.—*H. W. Chester.*

In a letter we are naming several concerns, any one of which can supply satisfactory bleaching material for mahogany.—*Editor.*

That Varnish Bloom

Referring to the published question signed "H. Furn. Co.", in December issue, page 94, blooming in varnishes and lacquers is generally caused by the use of a reduced rubbing oil in the rubbing operation before the varnish is thoroughly dry.

This condition is more prevalent in the fall and winter months, it seems, and sometimes can be traced to cold or improperly ventilated drying rooms. The condition lessens in warm weather when drying conditions are more favorable to complete drying.

If you would force dry your finished furniture I believe that most of your blooming troubles would disappear—that is, if you are still using the same kind of varnish that has proved successful in the past, when no blooming troubles were present.

Also, if mineral spirits are used for thinning the rubbing oil, try leaving them out or cutting down on the amount used, and see what effect this has on the finish. The use of a good clean-up polish will prove beneficial.

Try rubbing a few cases or pieces with a water and soap solution; then use a clean-up polish or one of the commercial rubbing solutions that are now on the market; these are made to minimize bloom.

If none of the above suggestions remedies your trouble (but I believe one will) you might try to find and use a type of varnish that is not affected by the rubbing mediums. Consult the representative of your regular source of supply. He can either come up with a remedy or perhaps induce his company's laboratory to make a slight change in the formulation of the varnish you are now using.—*Ed. Hogstrom.*

REPRINTS AVAILABLE

"The Theory and Practice of FINISHING FURNITURE"

from October, November, December, 1951, and January, February 1952 Issues.

PRICE 20 CENTS PER COPY—Stamps Accepted.

INDUSTRIAL FINISHING Magazine

1142 N. Meridian, Indianapolis 4, Ind.

Red Streaks; Walnut

When bleaching walnut we frequently encounter a piece of solid wood that retains a definite reddish cast, even with repeated bleaching. We are using ..... bleach, an excellent product (a well known brand).

Is there any other bleach, either commercial or to be mixed by us, that will solve this problem?—*M. Furn. Co.*

The brand of bleaching material you are using is all right. Try bleaching exactly according to the maker's

Rollacoat for economy

GET FINER—FASTER FINISHING!

The benefits to be gained by using the Rollacoat method of applying finishes and protective coatings, to practically any type of flat materials, are three-fold. In the first place coating speeds are greatly increased over those of any other method and are governed largely by how fast the coated materials can be handled or dried. Secondly, the coverage per sq. ft. per gallon is usually at least 50% greater, the only loss being the paint removed from the rolls at the end of a run. In the third place you obtain finer quality of finish due to accurate control of thickness and eveness of coat.

The applications of Rollacoating are numerous. Top, bottom and sides of practically any type of flat material, whether sheet or coil stock, can be coated by a single pass through the machine.

Special equipment for cleaning, treating, coating, drying, and rewinding strip in continuous process can be constructed to special order.

GASWAY CORPORATION

Write or wire today for the 12 page Gasway illustrated book describing Rollacoat Finishers, their possibilities and limitation.

6463 N. Ravenswood Ave.
Chicago 26, Illinois

directions. If this doesn't do it, try an extra bleaching operation just on the reddish areas or streaks. If an extra bleaching doesn't do the job, then treat the red streaks or areas with a toner. An expert finisher can "paint" out these discolorations so skillfully that no one can find them afterward.—*Editor.*

Vacuum Metallizing

A WIDE VARIETY of metals and plastics can be plated or metallized by high vacuum evaporation. The evaporation technique differs from "sputtering" with which it is sometimes confused. Commercial vacuum evaporation is comparatively new but is growing rapidly because of extremely low processing costs, brilliant finishes, and economical consumption of critical metals.

Articles to be coated are placed on suitable jigs and put into a chamber—a bell jar or, in large industrial units, a steel tank. A small amount of the coating metal is placed on filaments arranged in the chamber.

The interior of the chamber is evacuated to the required degree of vacuum, and low voltage current is fed to the filaments which become incandescent and heat the coating metal to a point where it boils and vaporizes. The metal vapor thus generated condenses on the articles in the chamber, producing a bright coating of microscopic thickness. When the coating is applied to only one surface of an article, it may be held stationary in the chamber. When a number of surfaces have to be coated or where irregularly shaped pieces must be completely covered, rotary jigs are employed.

In at least 95% of applications, the coating metal is aluminum, although silver, gold, copper, zinc, chromium, cobalt, nickel, selenium, and in fact, practically any metal and many metallic compounds, as well as alloys, can be deposited in the same manner.

Depending upon the type of service, it may be necessary to overcoat the aluminum coating to protect it from abrasion and strongly corrosive atmospheres. Both dip and spray methods are successfully employed in the application of organic topcoats and undercoats.

Overcoating offers the advantage that considerable variation in color is possible while retaining the metallic luster. For example, an amber tinted top coat will simulate a gold, copper, or brass finish. The wide variety of attractive finishes thus possible is limited only by the ingenuity of the designer.—*National Research Corp.*

John C. Malajan Joins Udylite

John C. Malajan has joined the Detroit sales office of the Udylite Corporation as sales engineer for the Michigan area. He has recently completed a comprehensive technical training course at the Detroit office.

Malajan is a native Detroiter. He was graduated from Albion College with a B.S. degree in chemistry. Following graduation he spent 18 months as a chemist with the U. S. Army, serving in the Pacific Theater.

Prior to joining Udylite, Malajan was associated with two other nationally known companies.

Set New Training Courses

Schedules for industrial instruments maintenance and repair courses for the first half of 1953 have been announced by Minneapolis-Honeywell Regulator Co.

Regular five-weeks courses will start Feb. 16, March 30, May 11 and June 8. The new 14-weeks comprehensive class will be held from Feb. 16 to May 22.

A large early enrollment in Honeywell customers' classes indicates an increasing over-all industry interest in and a desire to take advantage of the courses now in their 17th year.

The company has added instruction in several new products.

DeBURGH PATENTS:

. . . provide for powered, partially powered and gravity systems.

Our recommendations are for a powered system to provide:

1—Production Control

2—Cost Control

3—Eliminate All Pushing or Shoving

***4—Automatically Putting Pallets into and out of "Close Pack"**

5—Develop a Rythmic Operation

* { Reduces Conveyor Length Usually By One-Half
Reduces Drier Size Usually By One-Half

DeBurgh patents pending permit the use of conveyor in small plants heretofore unable to install conveyors.

INVESTIGATE—*No charge for estimates*

DeBURGH CONVEYORS

For Assembly, Finishing and Upholstery

1741 K St., N. W., Washington 6, D. C.

U. S. and Foreign Patents Issued and Pending

ROCKFORD WRINKLE FINISHES

ATTRACTIVE ONE-COAT COVERAGE FOR METAL PRODUCTS

Machines — from sewing to adding . . . boxes — from tackle to lunch . . . and hundreds of other metal products look better and stay better looking with Rockford *Wrinkle* Finishes.

In these quality-controlled specialty finishes you get complete, economical one-coat coverage even including metal imperfections and blemishes; a tough, durable protective surface; and a distinctiveness that puts more life into metal items.

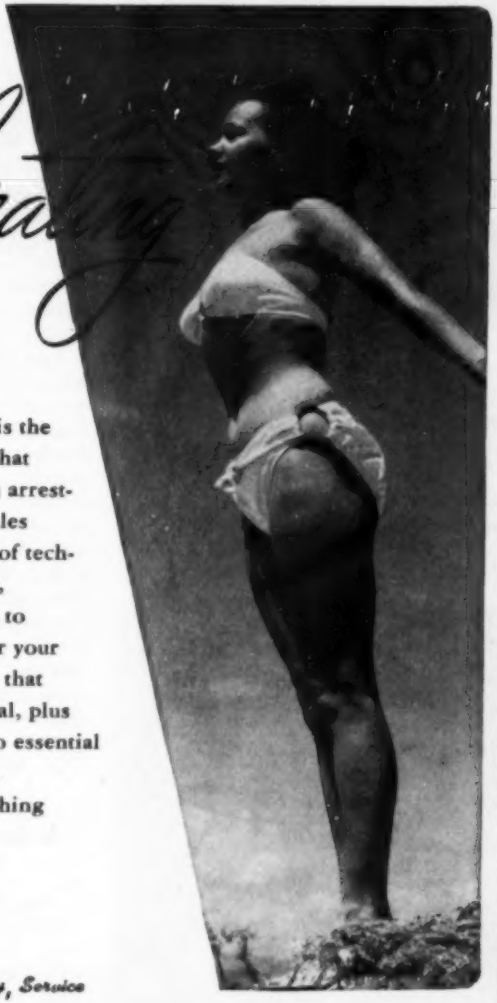
Whatever your requirements, drop us a line and we'll comply promptly with a solution to your wrinkle-surface problem. If you have an Army or Navy contract calling for wrinkle finish, we can work with you to help meet rigid AN specifications.

Research, Quality, Service

Affiliate
GORDON BARTELS CO.
Roller Coating Specialists

ROCKFORD VARNISH *Company*
ROCKFORD, ILLINOIS
Manufacturers of Protective and Decorative Coatings

Exhilarating



A fine, distinctive finish is the final exhilarating touch that gives a product attention arresting characteristics . . . sales appeal. Our skilled staff of technicians have the training, experience, and facilities to produce a good finish for your product . . . a finish with that all-important Sales Appeal, plus the protective qualities so essential to consumer satisfaction. Write us about your finishing problems.

Research, Quality, Service

ROCKFORD VARNISH *Company*
ROCKFORD, ILLINOIS
Manufacturers of Protective and Decorative Coatings

Affiliate
GORDON BARTELS CO.
Roller Coating Specialists

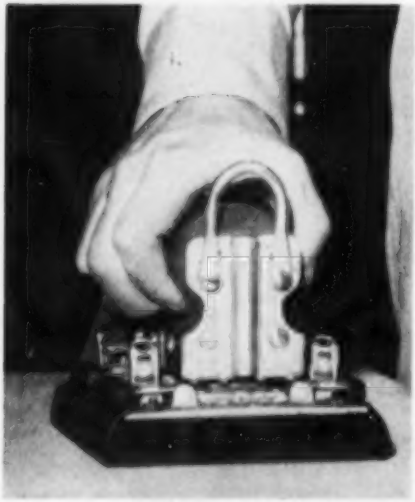
Tubular Rubber Pads For Sundstrand Air Sanders

Tubular sanding pads, used to support the sandpaper or finishing paper on Sundstrand Air Sanders, are now made from Hycar American rubber, a product of B. F. Goodrich Chemical Co. Hycar rubber pads may be used for either wet or dry sanding, and will not deteriorate when used with mineral spirits, oils, rubbing waxes.

The sanders, made by Sundstrand Machine Tool Co., Rockford, Ill., are designed to duplicate hand sanding by incorporating a straight-line sanding action rather than a circular motion. With this design and the use of resilient Hycar rubber pads, the machines leave no scratches, swirl or pressure marks on the finished surface. Two pads on each machine operate in opposed direction at as much as 2500 oscillations per minute to provide a smooth finish on flat or curved surfaces.

Rubbing oils and waxes or mineral-based finishing spirits have no effect on the Hycar pads. They are flexible enough to reach the low spots on any surface, whether it be wood, metal or plastic.

Each Hycar rubber sanding pad is molded onto a metal base which is attached to the air sander. A series of eight diagonal tubular holes run through the ¾-in. thick pad. This construction prevents any movement of the pad other than a straight-line action. Beveled edges of the pad assure a fine, even finish close to beadings or sanded surface edges. The pads are molded by Park-Rubber Co., Inc., Lake Zurich, Ill.



This air sanding machine has a Hycar rubber pad to support the sandpaper. Hycar resists the deteriorating effects of mineral spirits, finishing oils and waxes.

It Lacquer Coats Wet-Rinsed Metal Parts Quickly

Egyptain's new water-dip lacquer is especially formulated to displace moisture from the final rinsed surfaces of small electroplated metal pieces, and dry to a hard, highly-adherent, clear, tarnish-resistant finish in ten minutes at ordinary room heat.

Use of this water dip lacquer, the manufacturer claims, does away with the drying operation following the final rinse after electroplating. The new protective clear coating is particularly useful in the factories of

concerns that electroplate and finish small articles made of steel, aluminum, brass, cadmium and zinc.

Instant moisture displacement from the plated metal surfaces by this new dip lacquer, prevents stains and water spots from forming. It is a product of The Egyptian Lacquer Mfg. Co., Box 444, Newark 1, N. J.

Twin-Tunnel Metal Cleaning Machine Saves Space

A new metal cleaning machine, featuring a two-in-one space saving design, is announced by Cincinnati Cleaning & Finishing Machinery Co., Cincinnati and Ironton, Ohio. Recently installed by a division of a leading refrigeration manufacturer, it processes both monorail conveyor and belt conveyor production.

The machine has a tunnel, in which parts carried on the monorail conveyor system are washed, above a tunnel through which miscellaneous large and small parts are carried on a wire mesh belt through washing, rinsing and drying operations. Parts on the monorail system are carried through the washing machine without attention, being loaded at the preceeding work station and unloaded at the work station (painting) which follows the cleaning process.

Large parts not carried on the monorail are loaded on the conveyor belt section of the washer and manually unloaded at the discharge end. Smaller parts, fragile or difficult to clean, can be processed on the belt, using baskets or racks.

The monorail speed is 25-ft. per minute; monorail process times are: wash, 30 seconds; rinse, 20 seconds; and dry, 60 seconds. Since the speed of the conveyor belt is variable between 10 and 30-ft. per minute, process times in the belt washer section are: 72-24 seconds; rinse, 48-16 seconds; and dry, 150-50 seconds.

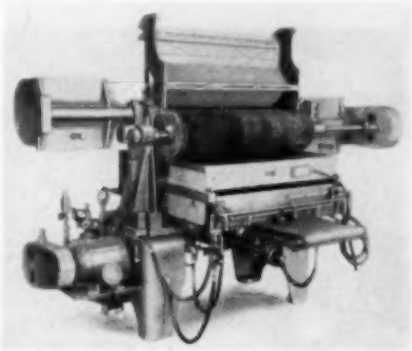
The washing solution, which may have a phosphoric acid base to prepare metal surfaces for painting, is contained in a 3500 gallon tank. From this tank, two pumps supply solution to the spray arrangements in the respective belt and monorail washing sections.

Both solution tanks are heated with steam, using removable plate coils. Float valves maintain solution level automatically.

Air used in drying is heated by a dual setup of mixing type gas burners supplying a maximum of six million BTU's per hour. Burners are completely equipped with safety and temperature control equipment. Two large blowers apply and recirculate the heated air to the parts at a velocity sufficient to remove excess water from the parts, simplifying the drying operation.

Surface Finishing Machine

The Clair Model 206-A Surface Finishing Machine, a modification of an earlier Clair Machine, has been developed specifically for surface finishing wrenches, pliers, screw drivers, ax heads and many other hand tools. A product of Clair Mfg. Co., Olean, N. Y., this machine is capable of any surface finishing operation, from



This power buffing machine has new features.

rough glaze to highly colored mirror reflecting surface.

Equipped for either mechanical holding or the use of a magnetic chuck, the new machine has been re-engineered to increase its horsepower limit. It also has been strengthened structurally.

Controlled by an electro-hydraulic system, this new machine is of single roll design—the spindle being 40-in. in length, with buffs ranging from 3 to 12-in. in diameter, as required by the work being processed. Optional V-belt drive of the spindle permits variable surface speeds.

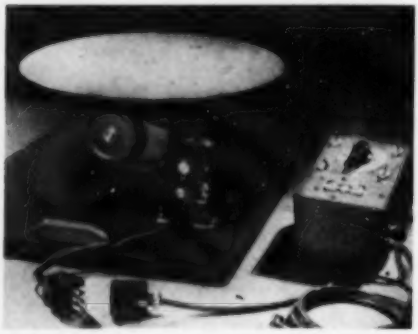
For additional details on the new Clair Model 206-A Surface Finishing Machine, write Clair Mfg. Co., 1008 S. Union St., Olean, N. Y.

"The Turntable With a Brain"

Gale Dorothea Mechanisms, 81-01 Broadway, Elmhurst, L.I., N.Y., manufacturer of turntables and animated mechanisms, has developed a "turntable with a brain." Called the "Flexi-Turn," this new production tool is controllable from a remote point, instantly reversible and completely variable in speed up to 20-rpm.

Just like the station control on a radio, the speed of the Flexi-Turn can be "dialed in," and this speed can be accelerated or decelerated at will with just a twist of the wrist. The unit can be reversed, instantly, with just the flick of a switch and can be stopped short or indexed to another position with ease.

Because of its versatility the Flexi-Turn is used in many different production processes.



Power turntable has variety of applications.

Have Clean White Hands

Magnus Chemical Co., Garwood, N. J., announces the introduction of Magnus Cob Hand Cleaner, an addition to its line of hand cleaners.

This product is a light weight free flowing powder containing corn cob meal as the abrasive. It is ideal for use by female employees or those desiring a cleaner with a soft, mild abrasive.

Magnus Cob Hand Cleaner contains Lanolin and the toilet grade soap used is of mild alkalinity. It produces a good lather, and rinses readily.

Instrument Detects Presence of Solvents in Air

A new instrument for accurately measuring atmospheric concentration of the aromatic hydrocarbons—benzene, toluene, xylene—is described as "a tool that could be used to good advantage in maintaining safe working conditions" in a recently issued bulletin, Circular 757, from the Scientific Section of the National Paint, Varnish & Lacquer Association, Inc.

Known as the MSA Aromatic Hydrocarbon Detector," the instrument was subjected to a variety of tests described in the circular, which characterized it as "a much simpler and more economical device for aromatic hydrocarbons only, based on a specific color reaction on a gel surface."

Various mixtures of the three aromatic hydrocarbons were tested, Cir-

cular 757 states, to determine the relative effects of blended solvents, and errors in estimates were found to be consistently on the side of safety. The presence of a masking type of paint deodorant did not interfere.

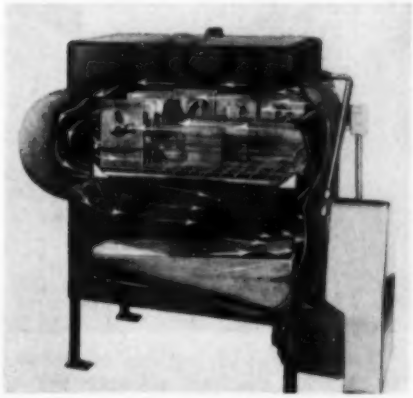
The circular stated that "within its recognized limits, this detector is a tool which could be used to good advantage in maintaining safe working conditions wherever there is any possibility of atmospheric contamination due to aromatic hydrocarbons."

A spokesman for the instrument manufacturer, Mine Safety Appliances Co., Braddock, Thomas & Meade Sts., Pittsburgh 8, Penna., reported that the Aromatic Hydrocarbon Detector is already in use in a variety of applications, both as a safety device and in production control.

Automatic Mask Washer

A new automatic machine for washing paint off spray painting masks has been developed by Finish Engineering Co., Inc., 1115 Cherry St., Erie, Penna.

Turbulent solvent action cleans all surfaces, without harm to intricate parts of any mask or its delicate bridging. When in use the tank is covered to reduce solvent evaporation. Field reports, the company says, show that solvent consumption is 50% less than with hand cleaning.



Phantom view showing inside of machine.

The tray, constructed of metal rods, has easily adjustable spacing rods to take care of various size masks.

The motor and switch are explosion proof, Class 1, Group D.

After the machine is idle for a few hours the sludge pan can be removed and accumulated paint solids can be scraped off. Floor space occupied by machine is 25x46-in.; solvent capacity is 45-gallons.

New Ventilated Buff

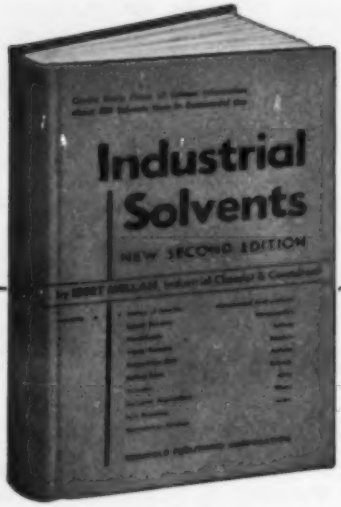
The Hanson-Van Winkle-Munning Co., Matawan, N. J., announces a new self-ventilating buff—for faster buffing and reduced buff wear. The new buff, known as Ruff-L-Buff, may be used for hand or machine operation.

When two or more are combined to make up a buffing wheel, ventilating air enters the wheel through holes in the fibre-board centers of buffs. As the wheel rotates, centrifugal force drives the air through 12 channels between each buff to the cloth portions of the buff where numerous ruffles distribute the air over the buff side and channel it through the wheel, cooling as it goes.

Strippable Coating Has New Features

A new sprayable, strippable coating is now being tested by Eagle Chemical Co., Joliet, Illinois. Capable of cold application by spray, brush or dip method, the product is said to be impervious to acids, alkalies, greases and oils, and affords protection against vapors and abrasion.

Called Spray-Strip, it can be applied to either wood or metallic sur-



This new edition is an excellent text and reference book of 758 pages, containing a tremendous amount of authentic and complete information on industrial solvents and their uses—for example, in cleaning and finishing materials and wherever solvents are used in industry. The revised contents are organized and classified in easy-to-read, easy-to-find form for practical busy men.

Its practical contents are divided into 16 chapters, some of which include such headings and sub-headings as solvents, non-solvents, evaporation rate, boiling point, flash point, toxicity, viscosity, safe handling, hydro-carbon solvents, alcohols, ketones, acids, ethers, esters, etc. It contains many new charts, illustrations and conveniently tabulated material, all developed to help the reader grasp the factual information quickly. The alphabetical subject index covers 11½ pages.

This book will prove valuable to key men in the industrial field, who have responsibilities in connection with the cleaning, surface conditioning or preparation of products for painting, plating or polishing, and those concerned with the selection, purchase, storage, handling, testing or use of finishing materials and thinners for same.

Price $12.00—Money Back Guarantee.

INDUSTRIAL FINISHING

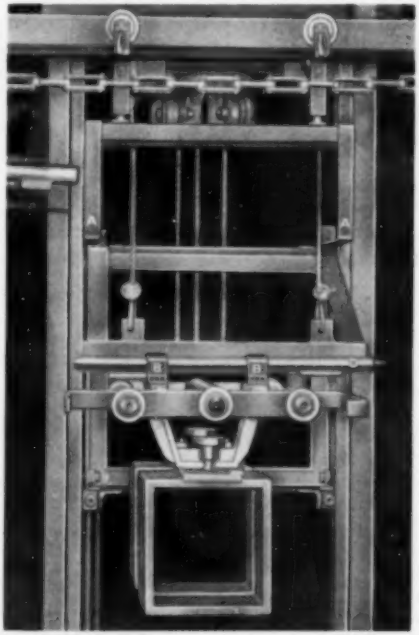
1142 N. Meridian St. Indianapolis 4, Ind.

faces, dries in 20 minutes and strips off in a single sheet. The product has been thoroughly tested by Foster D. Snell, Inc., consulting chemists, and is now undergoing use tests in the automotive and aviation industries. Samples may be obtained by writing direct to the manufacturer.

Space Saving Conveyor

An overhead monorail conveyor is now available which may be installed well up out of the way—at ceiling height, in fact. This arrangement offers several practical possibilities, such as providing extra floor space for storage, floor level operations, power trucking and foot traffic.

This conveyor doesn't require much



This new overhead conveyor system includes stations where the loads are automatically lowered to an operation, then raised again to move forward according to schedule.

NEWCOMB-DETROIT

PIONEERS IN ENGINEERING, MANUFACTURE AND INSTALLATION OF

INDUSTRIAL OVENS
SPRAY BOOTHS
PARTS WASHERS
DUST COLLECTORS
AIR SYSTEMS

ESTABLISHED 1912

DETROIT DIVISION—GRAND RAPIDS DIVISION—
NEWCOMB INDUSTRIES LTD., WINDSOR DIVISION

For Bulletins and Quotations, Wire, Write or Call—
NEWCOMB-DETROIT
5753 Russell St.,
Detroit 11, Mich.
TR 3-2100

space to move its load from high levels to floor level, or from one floor to the next for loading, surface cleaning and rustproofing, dipping or spray finishing and unloading.

At loading and unloading stations, as well as the other floor level operations, the product is automatically transferred to an elevator which moves it straight down to floor level. After the operation is completed, the product is again returned, straight up, to ceiling height to go on its way by conveyor. The entire coveyor and elevator system is automatically controlled by an electrical relay clock which can be set for the longest time required for any individual operation along the line.

The conveyor, known as "Material Transfer" is furnished to handle parts or products of any reasonable size, weight or shape. For additional information, write or telephone Shuler Conveyors, Inc., 1047 Northern Blvd., Roslyn, Long Island, New York. The company offers a 4-page illustrated descriptive folder that completely explains operation of equipment.

"Hollow Spindle" Stirrer

With the new "Hollow Spindle" laboratory stirrer by Eberbach, the propeller can be raised or lowered while the motor remains in a fixed position. Using only one propeller, the operator can: 1) vary its working length according to size of vessel employed, and 2) place and remove containers by raising the propeller only, greatly facilitating many stirring operations. The "hollow spindle" is actually the motor armature with a 5/16-in. chuck at one end and centering device at

the other. The noiseless and sparkless 1550-r.p.m. shaded pole motor develops a substantial torque of 5.195 inch-ounces. Complete information is available from the manufacturer, Eberbach Corp., Ann Arbor, Mich.

Detects Hazardous Gas, Vapor

Underwriters' Laboratories, Inc., has listed the "MSA Explosimeter, Model 2," a portable instrument developed by Mine Safety Appliances Co., Pittsburgh, for use in detecting hazardous gas or vapor-air atmospheres. A special filter cartridge, incorporating a chemical reagent, used with the instrument when sampling leaded gasoline vapor, is also listed.

Full details on the MSA Explosimeter are available upon request to Mine Safety Appliances Co., Braddock, Thomas and Meade Streets, Pittsburgh 8, Pennsylvania.

Luminous Decals Glow at Night

A recently discovered process makes possible a decal that is visible in the dark after exposure to natural or artificial light. One minute exposure to light, each day, causes these decals to glow for a minimum of ten hours. Life expectancy is seven years or more.

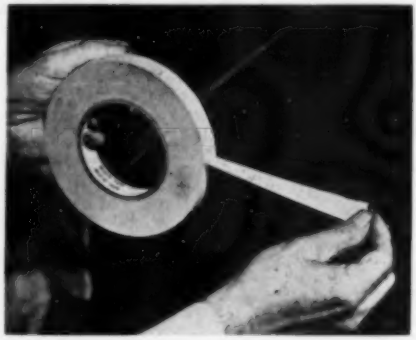
Toy manufacturers were quick to use luminous decals on their floor toys to prevent accidents from stumbling over them in the dark. Several builders of defense equipment have found them ideal for instructions that are essential to life and safety, the clock around. One truck body builder uses them for emergency warnings inside the cab. New uses seem to suggest themselves, wherever the decal is shown.

Further information can be had by addressing, Luminous Decals, Avon, Ohio.

Mystik Masking Tapes

A new pressure-sensitive masking tape, a completely new product, is known as Mystik Brand Thinflex Masking Tape No. 6207. It is unusually thin and flexible without sacrifice of necessary strength. The backing, made of cellulose fiber saturated with a special rubber compound, actually is more rubber than fiber. This makes possible extra flexibility, thinness and strength.

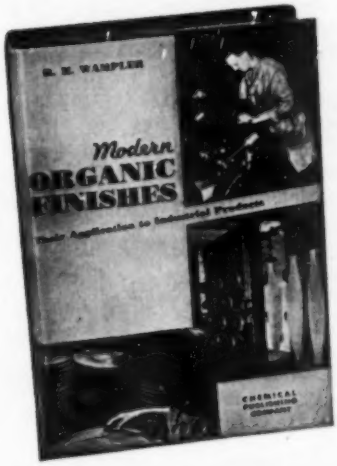
The backing is fully creped and is in "perfect balance" with adhesive strength so that the tape holds positively yet strips off fast in one piece without breakage.



More rubber than fiber, plus super-creping, gives new Mystik Brand Thinflex No. 6207 masking tape unusual thinness and flexibility. Backing is in perfect balance with adhesive strength so that tape holds positively, yet strips off fast in one piece without breaking.

During tests, according to the manufacturer, users reported great speed of handling—particularly in masking curves—positive holding at high temperatures, no residue, stain resistance, sharp paint separations due to thinness, and satisfactory performance under adverse weather conditions. Further information and free samples may be obtained by writing Mystik Adhesive Products, 2635 N. Kildare Ave., Chicago 39, Illinois.

A "MUST" For All Finishers!



MODERN ORGANIC FINISHES

"Their application to Industrial Products"

This book contains 452 pages of the lastest information on finishing. It describes modern finishing materials and equipment for their application, drying, conveying, etc., so that the reader may have an overall picture of modern industrial applications. Throughout, the main emphasis is on proper selection and use of materials to get the best possible finish at minimum cost.

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INDUSTRIAL FINISHING Magazine

1142 North Meridian Street **Indianapolis 4, Ind.**

Rampe Twin Barrel Finisher

Rampe Mfg. Co., 3320 St. Clair Ave., Cleveland 14, Ohio, has added to its line of Tumbler-Mixers, a standard size Twin Barrel Finisher. This machine has a ball-bearing variable-speed drive. Power is furnished by a ¾-hp., 220-volt, 3-phase motor.

Twin Barrel Finisher by Rampe.

Standard barrels furnished with this machine are 10¾ x 17-in., but larger barrels can be supplied if desired. Barrels are attached by four bolts each, and are furnished either unlined or vinyl plastic lined with safety type cover which prevents pressure from building up in the barrels.

Tint Glass Coating Reduces Sun Glare

The interiors of factories and other buildings can now be protected from the glare and damage done by the ultra violet rays of the sun, according to the manufacturer of Tint-Glass, a new liquid plastic produced by Protecto-Plastics Co. of St. Louis.

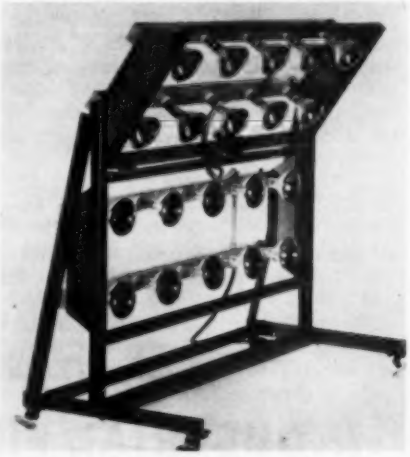
Tint-Glass is available in deep tones of green or blue for factory and industrial uses and in clear or amber for homes and store display windows. It can easily be applied to windows to reduce sun glare and stop fading of rugs, furniture, drapes, fabrics, and store merchandise. Tint-Glass is said to reduce the heat of the sun by as much as 30%.

Tint-Glass is easily wiped on to windows with a special applicator supplied by the manufacturer. It may also be applied in larger areas with any commercial paint roller. It dries hard and clear without streaks in 30 minutes and can be washed indefinitely. For further information, write Tint-Glass, c/o Roman, 721 Olive St., St. Louis 1, Mo.

Portable Infrared Dryer

A new type of infrared drying equipment is announced by the Trippe Mfg. Co., 609 W. Lake St., Chicago 6, Ill.

This dryer, known as the IR-20, is fully portable and uses 20 special 5000-hour life, infrared bulbs. The area it will dry with great rapidity is long enough and high enough to cover the longest automobile fender in one operation, or the widest rear deck (of an automobile) in one operation.



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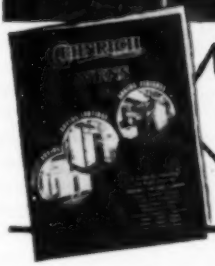
For organic finishes and protective coatings that must be dried or baked uniformly, thoroughly, in minimum time, you can be sure when it's done with the Gehnrich-engineered system of recirculating convection clean air heating.

Gehnrich ovens are designed in standard and special, batch or continuous production units from the smallest cabinet type to large conveyor ovens that may include spray, dip and other finishing and handling operations.



Get This Catalog

W. S. ROCKWELL COMPANY
2783 Eliot St., Fairfield, Conn.

Both panels with their 20 lamps can be raised or lowered to floor level, up to 76-in., making this dryer extremely flexible to use. By means of a one-man control handle, the upper panel of ten lamps can be tilted to any desired angle.

This unit can be used on any 220-volt AC, single-phase light circuit. The total wattage is near 3900, so the current consumption is not heavy.

Coatings That Withstand Salt Spray Fog

Galvanized iron treated with a Vinylite resin-based coating lasted twice as long as ordinary galvanized iron under severe conditions of a salt spray fog cabinet test before showing any signs of corrosive breakdown. These tough flexible coatings, based on Vinylite plastic resins, resist moisture, abrasion, aging, weathering besides corrosive acids, alkalies and most other chemicals. Tests conducted by an oil company in the Texas Gulf Coast area on Vinylite resin-based coatings compared durability of these coatings with iron oxide primer and galvanizing under the same severe corrosive conditions.

Exposed for 1204 hours continuously in a salt spray fog cabinet, one panel of corrugated, galvanized iron, unprepared but treated with a wash primer and top coat based on Vinylite resins, showed no signs of corrosive breakdown throughout the test. The uncoated panel lasted only 672 hours under the same severe conditions before the galvanizing completely deteriorated.

The salt spray fog cabinet test consists of a continuous fog of synthetic sea water at 92° to 95° F. and at 100% humidity. Similar tests under these conditions revealed the superior

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protection of Vinylite resin-based coatings for both wire brushed and sandblasted black iron, which were degreased before treating.

Two black iron test panels, both degreased and wire brushed, were also exposed in the salt spray fog cabinet for 1204 hours. The panel with a coating based on Vinylite resins showed no corrosive breakdown except at an uncoated, unprotected hole, while the same panel with a conventional coating of iron oxide primer broke down completely and showed poorest resistance to salt spray.

Other results of these tests indicated that coatings based on Vinylite resins gave better metal protection when the surface was first prepared by sandblasting as against wire brushing. The extreme chemical inertness of Vinylite resins makes coatings based on them ideal for protecting metal surfaces exposed to severe weather conditions and corrosive chemical atmospheres. Galvanized iron water tanks, supply sheds, cast iron garden furniture and other exposed metal structures have longer service lives when treated with a Vinylite resin-based coating.—*Bakelite Co.*

Moulded Viscosity Cups

A British resin-producing company, recognizing the widespread use of the No. 4 Ford cup as an easy means of measuring the consistency of paints, varnishes and synthetic resins, is distributing a precision cup moulded from phenol-formaldehyde resin.

The body of the cup has all the advantages of dimensional stability and chemical resistance usually associated with phenolic moulding materials, and a robust but accurate orifice of 0.156-in. has been achieved by using a brass insert which is machined to within a tolerance of plus or minus 0.0005-in. The instrument conforms to the Type B cup as described in the British Standard Specification No. 1733 : 1951.

The moulded cups are highly resistant to attack by solvents and may be used in place of the conventional metal cups for all normal purposes.

Such cups may be obtained, free of charge, by authentic users, on application to Resinous Chemicals Limited, Blaydon, County Durham, England.

No. 150
SpeedWay SpeedSander *Sands, Rubs, Polishes*
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Powerful, direct-connected (no gears), 3450 r.p.m., 100-120 v AC air-cooled motor. All sealed ball-bearing construction. Die-cast aluminum housing, polished. All-position handles. In hand weight only 5 lbs. Insulated with ground wire for wet as well as dry sanding or rubbing. Available accessories—deep contour pads, surface plates, felts, etc. Takes any sheet abrasives—3 covers 4½" x 6½" from standard 9" x 11" sheet.

A time saving quality tool priced so every worker can have one.

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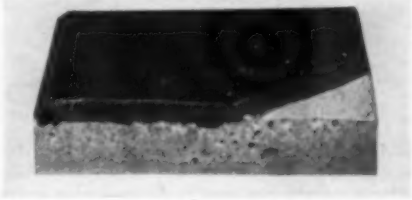
SpeedWay MANUFACTURING CO.
1886 So. 52nd Ave., Cicero 50, Ill.

"Ceilcrete," New Corrosion Proof Surfacing Material

A new trowelled-on surfacing material may soon be a widely accepted substitute for acid proof brick.

The material, known as Ceilcrete, is a combination of synthetic liquid resin, inert fillers and pigments and cures into a real hard dense stone-like corrosion proof surface that will withstand trucking, foot traffic and abrasion with a rated load carrying strength about four times greater than that of dense concrete.



Non-slip; non-sparking; acid resistant.

Its greatest usefulness is in its application to walls and floors that are subject to corrosive liquids or air.

Ceilcrete is trowelled on the concrete surfaces of tanks, walls, floors. It resists solvents, acids and alkalis, and is non-sparking, non-slip, and has high impact strength with remarkable abrasion resistance. The material is usually applied in a single layer ⅛-in. thick. It is available in black and colors, and is manufactured by Ceilcote Co., 4832 Ridge Road, Cleveland 9, Ohio.

Charles A. Frawley Joins N.W. Chemical Sales Staff

Charles A. Frawley has joined the sales staff of the Northwest Chemical Co., 9310 Roselawn Ave., Detroit 4, Mich., to service accounts in northern Ohio. Mr. Frawley's academic and industrial background equips him to serve well the technical problems encountered in the metal finishing industry.

Black Oxide Finish For Ferrous Metals

Special Chemicals Corp., 30 Irving Place, New York 3, N. Y., announces new, improved features in its Dipblack process, resulting in faster production, greater economy and remarkable uniformity on all types of ferrous metals. Dipblack is a simple immersion black oxide finish developed during the early part of World War II.

Dipblack will produce a uniform, rich black finish on any assembled unit consisting of different types of iron and steel (mild carbon and spring steel). No change in processing is necessary; one bath does the job!

Dipblack Colortrol, a specially prepared replenishing salt, maintains the solution in proper balance, insuring against off-color deposits, and assures a lustrous uniform fine black finish on all ferrous products.

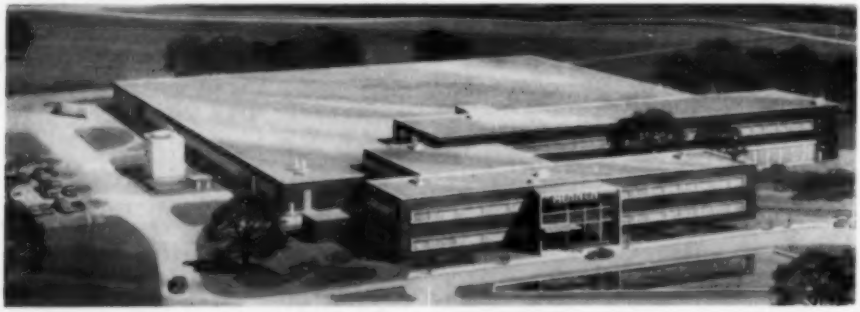
The finishes will not chip, peel or scale during or after welding, soldering, bending, punching, stamping or rolling. Alkali, solvents, or high temperature cannot harm metals treated by Dipblack. Dipblack increases wear resistance of ferrous metals and also acts as an excellent base for lacquers, varnishes and other organic coatings.

New Electric Vapor Degreaser

The Wallace DG-1 Degreaser is portable, electrically-operated, insulated and thermostatically-controlled. It can be provided with either a 110 or 220-volt heating element, and is ready for instanct plug-in operation.

Small portable vapor degreaser.

Heat-up time is less than 20 minutes; it requires only 2½ gallons of solvent. The manufacturer's non-inflammable Xsol solvent vaporizes at a high moisture-dispelling temperature; this, coupled with a hot-dip galvanized steel tank, practically eliminates rusting and corrosion problems. [To 102]



An example of the latest in modern factory buildings, located a mile from Morristown, N.J. It has more than 264,000-sq. ft. of floor space, conveyor lines, automatic equipment, laboratory, air conditioning, scientific lighting, cafeteria, safety and health office, locker rooms, attractive interiors, etc. Designed for The Mennen Co. by A. M. Kinney, Inc.

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Careful engineering has provided for quick and easy attachment of a flusher pump, lip-vent, 21-in. diameter work baskets, and other accessories required on some degreasing applications. With the Wallace DG-1 Degreaser, greasy parts and assemblies come out clean, dry and free of any film in a matter of seconds.

For bulletins and prices write: J. D. Wallace & Co., 132 S. California Ave., Dept. P, Chicago 12, Ill.

Carbon Monoxide Detector

A device that detects the presence of carbon monoxide in the air and sounds an alarm or turns on ventilating fans and opens ducts, is described and illustrated in a new 12-page, 2-color folder offered free by Taller & Cooper, 75 Front St., Brooklyn 1, N.Y.

Remember: Carbon monoxide, in concentrations as low as five parts per 10,000, is deadly poison; repeated exposure to concentrations as low as two parts per 10,000 can produce chronic physiological disorders.

Since it is one of the most elusive of all gases, CO is especially dangerous. Even at toxic levels and beyond, it is virtually without odor, taste or color.

Rustbond Primer

The Carboline Co., 112 E. 23rd. St., New York 10, N.Y., announces a paint primer that covers and adheres to rust, acting on it slowly to chemically and mechanically bond steel, rust and primer together. Further rusting is stopped. It wets and changes rust but does not dissolve it in the normal sense, nor does it "pop" rust off the surface. Of course, heavy and loose rust must be brushed off to get a proper bond through a rust formation to steel.

The following data is based on extensive field experience and various tests:

1) Rustbond Primer adheres almost perfectly to rusty steel, or to sandblasted steel surfaces. It doesn't adhere to smooth shiny steel unless these surfaces are thoroughly aged.

2) It covers sharp and rough edges as heavily as flat surfaces.

3) It is unplasticized and doesn't burn in an ordinary flame.

4) It ages in a curious way. After eight weeks it resists the action of all common paint removers, including xylene and methyl ethyl ketone. After five months it also adheres better than ever.

5) It resists most acids and (after aging) most solvents.

It is liked by users of vinyl coatings, as it eliminates the uncertain performance of such coatings on rusty steel, whether used with other primers or in the self-primed type. It is also excellent for rubber base, neoprene and other corrosion resisting coatings that must be applied on rusty or corroded steel in corrosive atmospheres.

Non-Stain Plastic Sealant For Many Purposes

Dennis Chemical Co. announces the development of Dennis No. 8500 Plastic Sealant, a general purpose sealing compound. No. 8500 is recommended for sealing refrigerator cabinets, automobile bodies, prefabricated buildings, railroad cars, and for many other uses where a superior glazing, caulking and waterproofing compound is desired. Dennis No. 8500 Plastic Sealant is *non-drying, non-hardening, non-staining and non-contaminating,*

For Dust Free Finishes!
BOND TACK CLOTH

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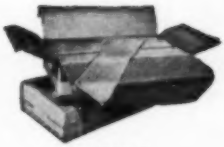
Cut off any size piece to use as needed.



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A Warranty of Satisfaction in Every Carton

and is supplied in bulk and extruded forms. Literature and samples are available upon written request to Dennis Chemical Co., 2701 Papin St., St. Louis 3, Mo.

New Color Card Paper

A new coating on paper exclusively conceived for paint chip manufacture is now available. It is now in use by color card firms in Chicago and in other parts of the Middle West.

A need for suitable paint chip coating in the color card industry was noticed by A. M. Wittenborn of Chicago. After years of research, trial and error and trying to get a few paper mills convinced that such a venture would be worth while, Mr. Wittenborn succeeded in coming up with Prime Rite Coated One Side.

After exhaustive tests, this coating has proved to accept all finishes equally well, with the added feature of eliminating the prime coat. Prime Rite Coated One Side is now manufactured in rolls and sheets applicable to most festoon and roller coater equipment. Samples and additional information can be obtained by writing Mr. A. N. Wittenborn, 700 W. Lake St., Chicago 6, Illinois.

Gordon is Made Works Manager

Mr. Robert J. Gordon has been appointed as Works Manager at the Eastern Metal Products Co., Tuckahoe, N. Y., according to an announcement by Mr. Seymour Troy, Vice-President in charge of production.

Klem's New "Rust-Sol 123"

Klem Chemicals, Inc., 14401 Lanson, Dearborn, Michigan, announces a phosphoric acid cleaner in concentrate form for ferrous metals. Designated as "Rust-Sol No. 123", this cleaner can be applied either by brush-on or immersion method and rinsed off with clear water. It dissolves all surface salts, rust, scale, etc. from production pieces, neutralizes and activates the surface with a slight etch and iron phosphate coating which makes an excellent base for paint.

Because of its neutralizing action, this cleaner can also be used following alkali stripping or cleaning. It is non-toxic, non-inflammable and non-volatile; emits no corrosive fumes and can be used safely anywhere in the plant.

Improved Safety Solvents

John B. Moore Corp., P. O. Box No. 3, Nutley 10, N.J., announces new safety solvents for electrical, mechanical and metal parts degreasing.

Orthosene is a slow-drying solvent, having high flash point and excellent degreasing quality without leaving residual oily film.

Per-Trolene is a rapid drying solvent, having a flash point of 140° F. which has wide application throughout electrical and mechanical maintenance shops where drying and exceptional degreasing qualities are essential to proper maintenance.

Clear Finish in Pressurized Container

A new crystal clear liquid methyl methacrylate plastic that provides insulation for radio, television and electronic components and wiring, and is available in pressurized containers, has been announced by the United Technical Laboratories, Morristown, N. J. The new liquid plastic is applied as a spray to reduce electrical leakage and as a convenient means of preserving the bright metal finishes of many household, marine, automotive and industrial products.

Plastik-707 is unaffected by exposure to acids, alkalis, chemical fumes, the sun, weather or salt spray. Used on linoleum or wood floors it seals the surface against staining and wear by providing a high gloss protective film that requires no scrubbing or waxing. It is also useful for the preservation of documents, maps, prints, shipping labels, photographs and paintings.

Dr. Fineberg of Glyco Products Becomes Director of Research

Dr. Herbert Fineberg, Chief Chemist of the Glyco Products Co., Inc. since 1948, has been promoted to the position of Director of Research with this company, with headquarters at Williamsport, Penna.

Dr. Fineberg received his Ph.D. degree from the University of Illinois. He has prevoiusly been a research chemist for other companies.

Cleaning-Finishing Mach. Co. Adds New Plant

Start of construction on a new plant in Sharonville, Ohio, near Cincinnati, is announced by H. E. Huddle, president of Cincinnati Cleaning & Finishing Machinery Co., Ironton and Cincinnati, Ohio.

Erection of the new plant is part of an expansion plan which the firm instituted at the end of World War II. While sales and engineering offices have been maintained in Cincinnati, previously all manufacturing production was carried on in two plants located in Ironton.

The new plant will be completed early in 1953. It will include about 15,000-sq.ft. of manufacturing space in addition to sales and engineering offices, which will be moved from the present location in downtown Cincinnati. Located in the northern section of Sharonville, the new plant's 5-acre site is convenient to transportation facilities.

Operation of the Ironton plants will be continued, according to Mr. Huddle, with the new plant adding manufacturing facilities required to meet present volume of orders for the company's metal cleaning and finishing machinery.

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NEW PERIOD
Wherever specifications call for superior finishing at low cost . . . you'll find New Period Production Finishes on this job. Discriminating manufacturers have come to rely on this famous line for uniform, top quality finishing.
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NEW PERIOD Production Finishes
ESTABLISHED 1917
NEW YORK WOODFINISHERS' Supply Co. INC.
109 IMLAY STREET BROOKLYN, N.Y.

Random Comment on the Industrial Scene

(Continued from page 8)

tomotive use, has already been used in over a million automobiles. The remarkable lubricating properties of MoS2 (molybdenum disulfide) together with the ease of application by conventional methods and equipment, made possible by the various "Liqui-Moly" formulations, have made this one of the outstanding developments in lubrication in recent years.

The new lubricant-coating, called "Molynamel", puts a lustrous, hard, greasy-feeling but clean coating, from a fifth to half a thousandth thick, on any type of surface, over practically any kind of material. It is especially effective on porus surfaces, since it fills the pores and provides a feeding-supply of lubricant.

The coating might also be of interest in "printed circuit" techniques, since it can be silk-screened or otherwise applied in irregular patterns.

* * *

Enameled Steel Siding. A new, improved enameled steel roofing and siding material specially suited for individual building construction and repair will be manufactured by the Toledo Porcelain Enamel Products Co., a subsidiary of the Bettinger Corp. of Waltham, Mass.

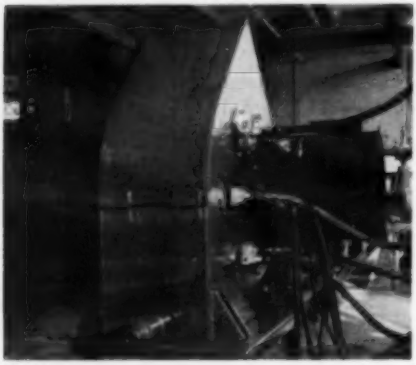
The new material, called "Vitri-Cor" is made from a corrugated steel base to which porcelain enamel has been fused at 1650° F. According to Robert A. Weaver, Jr., president of Bettinger, the enamel coating on the corrugated steel gives complete protection against fire, corrosive gases, moisture, steam, smoke and salt air, and reduces roofing and siding costs to zero.

Dustless Spray Painting; New Gyromat Machine

On page 94 of November 1952 issue of *Industrial Finishing*, we notice some comment on "Dustless Spray Painting". Also, in the write-up was a statement indicating that the Gyromat Corp. may (or may not) be operating. We would like to bring the following facts to your attention:

In the first place, the Electric Painting Co. is no longer in existence, and the article sold by said company, namely the hand-operated electric-driven centrifugal atomizing unit, is no longer manufactured. Mr. Norris, the inventor of this equipment and other centrifugal spraying processes, is the licensor of the Gyromat Corp. At some future date we may or may not manufacture similar hand-operated machines. Presently, our activities are devoted to the application of patents licensed by Mr. Norris to industrial coating applications.

Secondly, the type of unit described in your June 1951 issue is no longer manufactured by the Gyromat Corp. Very few of these units were made and put into production; all units have been returned to the factory and have been replaced by the later type unit, photographs of which are being sent you.



Outside view of Gyromat automatic mechanical spraying machine, through which products to be painted are conveyed. Paint is directed under pressure through hose to rotary spray heads inside the chamber.

Incidently, this new type of sprayhead and its application is being applied successfully on commercial painting applications, specifically in the pipe coating field where we have directed most of our energies. However, we are able to coat most every type of manufactured article that could be painted with an automatic spray setup.

The accompanying photograph of the unit does not include the pumping system, control panel and other auxiliary equipment, but primarily shows a typical sprayhead setup with a collecting chamber for use on a standard pipe coating line. These sprayheads are high speed centrifugal units .... The bowl operates at high speed; the material is fed to the bowl and engages the little distributor which is free to rotate on its own axis, and driven like a turbine, it throws a spray pattern out across the top of the bowl. This pattern can be controlled and basically is rectangular in nature, about 1½-in. by 8-in. long respectively. Atomization is comparable with that from ordinary spray guns.

As outlined in Section A, which is sent to you, the units are sprayed in a collecting chamber. This chamber can be designed to accommodate any type of conveyor or spray head setup. We are not frozen to the type shown in the photograph. Vapor solvent concentration is established in the chamber, making it possible to automatically drain off the oversprayed material and collect same for immediate reuse.

Material efficiency, except for certain solvent losses, is high; the solids recovery is about 99½%. Solvent losses are negligible in most instances, except in cases where fast solvents

are used in lacquers and there will be some solvent loss volumetrically, but the material collected can be brought up to sprayable viscosities and reused. —*R. F. Wiggins, President, The Gyromat Corp.*

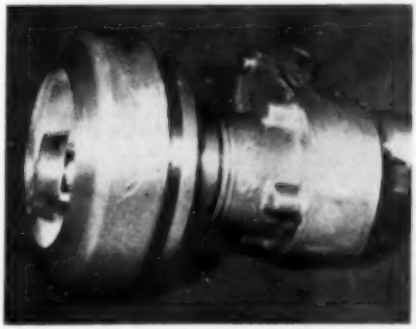
Editor's Note: Quoting from some of the company's literature:

The small sprayhead is the basic element for the utilization of this technique. A coating material is delivered to the sprayhead at controllable feed rates and the high speed rotating sprayhead finely atomizes the material being delivered to it, producing a directional and controllable spray pattern.

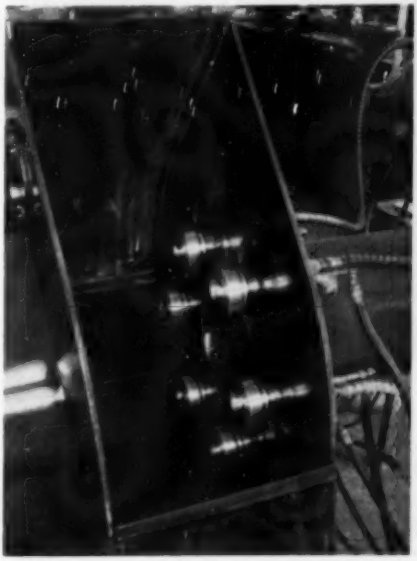
Sprayheads are mounted on flexible, if required, mounts to the end plates of a stationary collecting chamber. The collecting chamber primarily contains and collects the overspray for reuse.

A pumping system with fluid pressure regulation or, in the case of single or double sprayhead installation, a pressure feed tank may be used to deliver coating material to the sprayheads. A pumping system also pumps material from the collecting chamber to the original source.

The collecting chamber is designed to accommodate the size and type of parts to be coated; the type of conveyor to be employed; the number of sprayheads required and their arrangement.



Close-up of the rotary sprayhead.



Inside view of Gyromat spraying machine set up for coating large diameter iron pipe which moves lengthwise through the center of the machine. Each of the six rotating sprayheads is supplied by paint pumped under pressure from the supply source.

A single sprayhead can spray material effectively up to 25-gallons per hour.

The Gyromat sprayhead installation is never the limiting factor in production requirements. With a proper setup, conveyor speeds of 200-ft. per minute (such as in the coating of pipe) do not tax the capacity of the installation.

Marks Hard Smooth Surfaces

Permanent impression markings can be quickly "etched" on metal, glass, etc., with "Airgrit" fine blasting, a product of Jas. H. Matthews & Co., 3942 Forbes St., Pittsburgh 13, Penna.

Carbon Monoxide Detector

Information about carbon monoxide poisoning and instruments for detecting the presence of even small amounts of CO in the air, is presented effectively and attractively in a new 12-page bulletin published by Taller & Cooper, Inc., 75 Front St., Brooklyn 1, N. Y.

Wood Products; Research

A new 32-page booklet, 8½x11-in., printed in two colors and attractively illustrated, describes new developments in several wood products, scientific research, testing and treating of same, as conducted with the vast facilities of Timber Engineering Co., 1319 Eighteenth St., N. W., Washington 6, D. C. Copies of the book are free.

Temperature Instruments

A new bulletin covering temperature instruments for the metal finishing industry has just been announced by the H. O. Trerice Co., 1420 W. Lafayette Blvd., Detroit 16, Michigan.

The bulletin describes thermometers, pressure instruments, temperature controllers and steam traps. Typical plating installations are diagramed. A portion of the booklet tells why automatic temperature control is essential to plating operations.

New Hand Pump Bulletin

A new six-page Blackmer Hand Pump Bulletin illustrates sizes from 7 to 28 gallons-per-minute capacity for pumping lube, vegetable or paint oils, syrups, thinners, solvents, cutting and core oils, and industrial liquids from drums, wheel tanks or underground storage. Also shown are models used as refueling systems for power equipment, and mounting accessories for wall, base and pipeline use in plants or as components of manufactured equipment.

Bulletin HP206 is available on request from Blackmer Pump Co., 1809 Century Ave., S.W., Grand Rapids 9, Michigan.

Better Built Air Systems

A new 4-page, 2-color illustrated bulletin on the above subject—heating, drying, baking, curing, cooling, ventilating, conditioning—is offered free by J. O. Ross Engineering Corp., 444 Madison Ave., New York 22, N. Y., and its offices in Chicago, Boston, Detroit, Seattle and Los Angeles.

Demand for Ross engineered systems and products has been so great that the company has built and placed in operation two plants within the last five years.

Attachments for Industrial Trucks

How to increase the efficiency of your powered industrial trucks is the theme of a 2-color booklet offered by The Elwell-Parker Electric Co., 4205 St. Clair Ave., Cleveland 3, Ohio. According to the manufacturer, the use of various types of specially designed attachments enables one truck to do the job of many, thereby increasing economy of operation, plus greatly increasing its range of applications.

Drying and Finishing Ovens; 24-Page Booklet Free

A 24-page illustrated bulletin on the above subject, by James D. Russell of Young Brothers Co., 1835 Columbus Road, Cleveland 13, Ohio, is available free to those who ask for it. Types of ovens described and illustrated include cabinet, continuous conveyor, cross-bar horizontal, horizontal wicket, tip-up and vertical. Heat seals and air circulating systems are discussed too.

Industrial Maintenance Book

"Industrial Maintenance" is the title of a new booklet offered by the consulting firm of Wheeler Associates, Inc., 15017 Detroit Ave., Cleveland 7, Ohio. The first such booket, "Material Handling," was so well received that William S. Wheeler, President of the firm has reprinted a second section of his famous Cost Reduction Training Program.

The booklet on Industrial Maintenance details such vital topics as How to Keep Equipment, Methods and Facilities in top Operating Condition; A Guide to

Organizing an Industrial Maintenance Program; Check List for Machinery; Maintenance of Methods; Plant Facilities; and Physical Environment.

In addition, the literature covers the features of lighting, air conditioning, color painting, noise conditioning, vibration control, plant architecture and good housekeeping. You can also get the details of employee operating efficiency, worker health and comfort, and employee morale.

In addition to the descriptive portion of the booklet, a highly valuable Maintenance Check List is designed to aid in evaluating a company's existing maintenance program.

Selection of Paints for Interior Surfaces

Members of the American Hotel Association now may obtain upon request a free copy of a newly completed 30-page report, "Paints—A Guide for Their Selection and Use for Interior Surfaces."

Prepared by York Research Corp. upon the recommendation of AHA's Research Committee, the comprehensive study is the result of more than two years' work by the Association's consultants.

Part I of the manual is devoted to the composition of paint and how to apply it. One section discusses the techniques of applying paint with brush, spray gun or roller coater. Clear directions are included for preparing new or old surfaces, whether wood, metal, plaster or wallboard. Recommendations for the use of suitable primer-sealers and undercoats are based on the latest findings.

Luminall Releases New Casein Color Chart

The Luminall Paint division of National Chemical & Mfg. Co., 3617 S. May St., Chicago 9, Ill., has released the fourth in a series of distinctive color charts showing 48 casein colors for artists, muralists, designers and interior decorators.

With a cover illustration of the famed Eiffel Tower in Paris, the chart features 16 actual casein paint chips. Two letdowns of each color are also shown as a suggestion of the endless variety of hues, tints and shades which can be blended by combining the colors with white.

The new chart will be mailed on request to Luminall Paints, Chicago 9, Ill. It was designed by Robert Warren Petesch, Chicago artist, and completes the series of four outstanding emulsion paint charts, including a 44-color "Match-A-Chip" chart for rubberized paint, a 28-color chart for alkyd resin masonry paint, as well as a 12-color chart showing pastel casein colors.

BOOKS On Finishing Available

"MODERN ORGANIC FINISHES—Their Application to Industrial Products" (452 pages) new $8.50

"CHEMICAL FORMULARY" (Vol. IX) 7.50

"FINISHING METAL PRODUCTS"—2nd edition (352 pages) 5.50

"PRACTICAL FURNITURE FINISHING" (112 pages) 1.50

"FURNITURE FINISHING" (543 pages) 5.00

"SPRAY PAINTING"—Industrial and Commercial (169 pages) 2.50

"THE MIXING OF COLORS AND PAINTS" (292 pages) 3.00

"WOOD FINISHING" (361 pages) 3.00

"NATIONAL PAINT DICTIONARY" (704 pages) 7.50

"MODERN POLISHES AND SPECIALTIES" (313 pages) 7.50

"PRACTICAL COLOR SIMPLIFIED" (128 pages) 5.00

"GRAINING"—Ancient and Modern (224 pages) 5.00

"THE SILK SCREEN PRINTING PROCESS" (225 pages) 4.50

"SCREEN PROCESS METHODS OF REPRODUCTION" (252 pages) 4.00

"THE SCIENCE OF WRINKLE FINISHING" (204 pages) 5.00

"THE SCIENCE OF MODERN WOOD FINISHING" (386 pages) 6.00

"PAINT & VARNISH TECHNOLOGY" (509 pages) 8.00

"METALLIC AND NON-METALLIC COATINGS FOR GRAY IRON" (76 pages) 1.75

"PAINT FILM DEFECTS — Their Causes and Cure" (544 pages) 12.00

"INDUSTRIAL SOLVENTS" (784 pages) 12.00

"FINISHING MATERIALS AND METHODS" (320 pages) 4.00

Cash Must Accompany Order—
Send for Descriptive Circular

INDUSTRIAL FINISHING
1142 N. Meridian St. Indianapolis 4, Ind.

Metal Forming Bulletin

Gilron Products Co. announces the completion of a new 8-page, 2-color folder of interest to persons engaged in all metal forming operations.

This new folder describes Drawcote, Gilron's new dry lubricant for use in drawing, forming and extruding operations. A brief description of some of Gilron's drawing compounds and metal cleaners in also included.

A description of tailor-made Gilron Drawcote Application Equipment, including rotary brush washers, coating machines and drawing compound applicators, outlines the merits of this equipment.

Copies of this new folder can be obtained by addressing your request to Gilron Products Co., 6007 Euclid Ave., Cleveland 3, Ohio.

Tumb-L-Matic Offers Bulletin On Tumbling Barrels

Tumb-L-Matic, Inc., New York, N. Y., offers a new bulletin on its line of LS Tumbling Barrels for cutting down, deburring, definning, dry burnishing and polishing metal and plastic parts.

Detailed information is given on barrel sizes, drives, controls, and liners. Photographs show two and three-compartment models and illustrate overhead and floor-mounted drive methods. A detailed specification table gives standard model numbers, dimensions, and number of compartments per barrel. Also included are recommendations for specific abrasive compounds to use in the various tumbling operations.

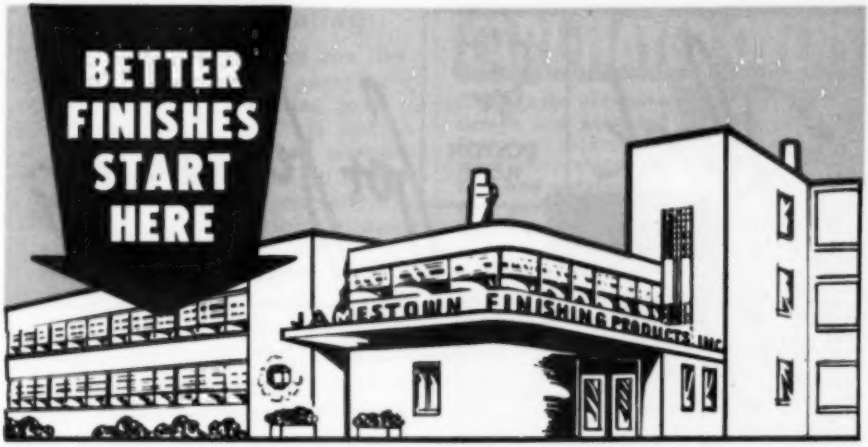
For further information write to Tumb-L-Matic, Inc., 4510 Bullard Ave., New York 70, N. Y. Ask for Bulletin LS-52. For information on wet tumbling ask for Bulletin XL-52.

Chemical Spills and Burns

"Chemical Spills and Burns," a recent addition to the National Safety Council's safetygraph series, emphasizes the dangers of liquid chemicals, their safe handling and transportation.

Methods for clearly identifying chemicals, how to empty drums, carboys and tank cars, what to do when chemicals are spilled or splashed on workers, and measures to take when overcome by chemical vapors, are among the subjects covered.

The safetygraph, a visual aid for training small groups, consists of 12 spiral-bound 18x24 pages inserted in a brown leatherette cover. The portfolio is opened to form an easel. The safety talk is printed on the back surface of the easel in large, easy-to-read type. On the front pages, facing the audience, are colorful cartoons and illustrations that give visual impact to the talk. [*Cont'd page 112*]



The arrow points to the approximate location of Jamestown Finishing Products Inc.'s research department, the pride and joy of our new modern plant. Here a 20-man team of research chemists keeps careful watch over the quality of AVALEX (trade name for our line of lacquers, enamels, varnishes and stains). Since 1911, the accent has been on research at Jamestown, to keep our finishes the standard of quality for the industry. Our facilities are at your disposal. Let us help you with your finishing problems.

SPECIFY **AVALEX**

TRADE NAME FOR THE SUPERIOR QUALITY LACQUERS, ENAMELS, VARNISHES, STAINS AND OTHER INDUSTRIAL FINISHES MADE BY:

BETTER FINISHES THROUGH RESEARCH
JF PRODUCTS
ESTABLISHED 1911

JAMESTOWN FINISHING PRODUCTS, INC.
JAMESTOWN, N.Y.

Prices may be obtained from the National Safety Council, 425 North Michigan Ave., Chicago 11, Ill. The safetygraph, No. 22, will be sent on approval for a 5-day free examination.

New Colorful Lighting Bulletin Free

The latest and most elaborate of a series of "See Better, Work Better" bulletins, designed to promote improved lighting in the nation's industrial plants, has been issued by General Electric's Lamp Division.

"Bulletin No. 8," an eight-page illustrated publication in full color, describes what it calls the "revolution in indusrial lighting," . . . based on the concept of balanced brightness, as well as sufficient light, over the entire work area. Benefits are listed as better workmanship, faster output, reduced spoilage, fewer accidents, and improved employee morale.

Headings of the bulletin's various sections include, Here's What is Happening to Industrial Lighting, New Era in Lighting Fixtures, Comfortable Working Environments Pay Off, Another Look at the New Look.

For a single free copy write the Inquiry Bureau, General Electric Co., Nela Park, Cleveland 12, Ohio.

Indus. Washing Machine Corp. Moves to Larger Quarters

The need for expanded manufacturing facilities and substantially increased plant area necessitated the recent relocation of Industrial Washing Machine Corp., to Matawan, N. J., it was announced by Howard M. Sadwith, president of the company. Mr. Sadwith declared the move from New Brunswick to the present site at 32 Main St., Matawan, provides four times the floor space of the former plant.

The new quarters will make possible an increased production schedule to meet the growing demand for Industrial Washing Machines which are used extensively in the metal cleaning and treating field, the baking industry and in a wide variety of other applications. As exclusive agents for the manufacturer, Industrial Systems Co. will continue to handle all sales matters through its New Brunswick, N. J., office.

Western Metal Show in March

The eighth Western Metal Exposition, Pan-Pacific Auditorium, and Western Metal Congress, Statler Hotel, will be held in Los Angeles, March 23-27, sponsored by American Society for Metals and other technical groups.

Hot Spray Painting

MORE INTEREST has now been developed in the hot spraying of automotive finishes. Heating paint or lacquer to around 160° F. is just another way to reduce its viscosity. Heat is substituted for all or part of the reducing thinner generally used to bring paint to the right spraying condition.

An obvious merit of hot spray is the saving in thinner used. Because heated lacquer contains less thinner, it has a higher solids content and therefore gives better build. This saves the finisher's firm time and money, as he puts on fewer coats of lacquer to get the required film thickness necessary with cold spraying.

In spraying heated lacquer less thinner is in the material and, at the higher heat, there is a greater loss of thinner in the process of atomization. Thus, there is less tendency for the lacquer coating to run or sag.

As a result, there is less thinner to be evaporated from the paint film. Users also find that they get a slightly faster initial dry to the dust-free stage. Another advantage is a reduction in spray dust.

With synthetics, for example, an air pressure of 50-lbs. is sufficient for hot spraying, wheras 60-lbs. is normally used for cold spray application. Spraying at lower air pressure also produces a paint film with less orange peel and better gloss. In the case of lacquers, the smoother film produced decreases the amount of rubbing and polishing usually required.

Painters who use cold spray find it desirable to make adjustments for daily and seasonal temperature changes. However, changes in the reducing thinner, spraying pressures, and gun strokes do not always compensate for this. With controlled heating units it is possible to maintain a uniform temperature of the paint spray and to eliminate the variables.—*DuPont.*

CARL-MAYER OVENS

Carl-Mayer exclusive design and patented features ensure the most efficient operation and outstanding fuel economy. Many installations.

Write for Bulletin No. 350

Enamel Drying, Japanning, Lacquering, Ceramic Drying

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3030 Euclid Avenue Cleveland, Ohio
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YOU STARTED IT... I'LL HELP YOU FINISH IT!

Detroit Handy "Tac" Rags remove all dust, lint and sand particles. Save time and materials. Avoid costly rejects. Ready for instant use. Never dry out or harden.

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DETRO MFG. & SALES CO., CULVER CITY, CALIFORNIA

Industrial FINISHING Editorial

1953 Outlook; Look into New Possibilities

We hear and read predictions on business conditions in 1953. Consensus of opinion among economists is that business will be generally good throughout the entire year, with perhaps the best business outlook in the first half of the year. No sound reason appears to throw any doubt into the accuracy of these predictions. Certainly all signs point in that direction.

Unless a major war should occur in the foreseeable future, admittedly defense spending will be eventually curtailed. It seems logical to assume that the excess production can be absorbed by civilian consumption, based upon the increase in population and the ever mounting demand for a higher standard of living.

However, the time to prepare for a possible decline in the demand for any of your present products, is before the signs of decline show up. Some firms will have to look for new markets. Others may have to add to, reduce, cut out, or change some of their products. Certain products will have to be redesigned and "freshened up" with new colors or new finishes.

The Department of Commerce in Washington, D. C., has published a book that reveals authentic information on potential markets for goods and services which will be available or which may be developed for a civilian peacetime economy. Careful review and study of the present markets and their possibilities for expansion should come first. When these sources for sales have been definitely exhausted, then new fields may be explored. But the time to make this study and research is immediately. Remember the Boy Scout's motto: "Be Prepared".

REPRINTS AVAILABLE

"WHY COLOR CHANGES IN FINISHED FURNITURE"

from the September, 1951, Issue.

PRICE 10 CENTS PER COPY—
Stamps Accepted.

INDUSTRIAL FINISHING Magazine
1142 N. Meridian, Indianapolis 4, Ind.

Paint Sales Up

Sales for the paint, varnish and lacquer industry, as reported by the Bureau of Census, reached a total of $119,943,000 for the month of October. This is an increase of 9.3% over Octocber 1951 sales of $109,700,000.

Trade sales were $71,457,000 which is an increase of 8% over the $66,138,000 of October 1951. Industrial product finishes also showed an increase over the comparable month of 1951, with sales of $48,486,000, a gain of 11.3%.

Total sales for the first ten months of 1952 were $1,166,927,000, which was only 1.5% less than for the same period a year previous. The minus percentage difference, 1952 vs. 1951, has been reduced each recent month

Send a few representative samples to be processed and submitted for your examination.

Many difficult coating problems made easy with the BARRETT "FILWHIRL" ENAMELER

The Barrett "Filwhirl" Centrifugal Enameler provides a sure, clean and economical method of applying enamel or lacquer to parts or products that can be rotated. It saves coating material, time and expense. It is designed for bulk handling, and speedy production requirements.

It has proven highly successful in coating helical springs, clips, clasps, zipper parts, bead and link chain, toys, automobile and luggage hardware, misc. metal stampings, castings, etc. Good results are obtained with japan, lacquers, varnishes, paints, waxes. No drips or fatty edges.

Furnished in spindle post, fixed bowl, and carrier types, in several capacities. Safety features included and auxiliary equipment is available.

THE LEON J. BARRETT COMPANY
Designers and Builders of Centrifugal Machinery
1703 GRAFTON ROAD WORCESTER 1, MASS.

SCREEN PROCESS METHODS of REPRODUCTION

Cloth binding, 252 pages, 179 illustrations. Price..... **$4.00**

This new book by Bert Zahn, is complete, informative and practical and covers all known processes. It will fill the needs of everyone interested in the subject for it tells in text and shows in pictures—what can be done with screen process methods—what is required in equipment and facilities—what the difference is in the various methods—what materials to use and how to prepare them—how to proceed with the various operations from the simple first steps to the finished product. It gives lists of manufacturers who are using these processes as well as lists of products on which they can be used.

INDUSTRIAL FINISHING MAGAZINE
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as the industry forged ahead after being 12.1% behind the 1951 record total for the first three months.

Particularly noteworthy is the fact that during 1952, sales have exceeded $100 million each month, indicating a steady movement of products of the industry. If reports for November and December show that this pace has continued, as expected, the 1952 total will exceed that of 1951 and establish a new all-time record.

The continuing high volume for the industry is a tribute to paint and lacquer manufacturers who faced production handicaps during the year due to shortages. New formulations overcame these. The steel strike and resultant shutdowns curtailed the sales for industrial product finishes; otherwise sales would have been considerably higher. All present indications are that 1953 should be even better.—*"Coatings", N.P.V. & L.A.*

To Beat Inflation, Put in Better Equipment

The president of a well known pressed steel company predicts inflation "as long as you can see in the future". The solution, he declares, is better machines and better organization. Industry must buy more new machines and use more capital in relation to labor. Instead of postponing modernization, he advises companies to "get rid of the old stuff" and buy new equipment now. It will cost more later, he warns.

Too many companies, he says, have been sitting back, waiting to see what will happen. His firm, he relates, has gone ahead to modernize its plants and to develop long range manufacturing plans that are flexible enough to take care of any short range changes, up or down.

According to this executive, who has traveled extensively and found inflation in foreign countries—even in a little village in the mountains of Peru — the only way to beat the squeeze on profit is to get more efficiency now. Industry, he declares, needs more productive organizations in terms of output per payroll hour. Increased productivity demands better organization as well as better machines which means, he points out, "management doing its job".

To Produce Efficiently, Sell the Products . . . .

Manufacturing men must project their knowledge of production costs into the distribution field so that methods of distribution can work hand in hand with methods of production to give the consumer better value. So declared an executive at the American Management Association Conference held in Cleveland early in December, 1952. The greatest successes of his firm—a nation wide mail order and retail sales organization—have resulted, he reported, from association with good production management which has had the initiative to suggest changes that have made it possible to simplify production runs, maintain a constant output level, and guarantee distribution of the product produced.

More costs are incurred in distribution of many products from the point of manufacture to the ultimate consumer than in the manufacture of the articles themselves, he pointed out. Coordination between seller and manufacturer has brought his company savings not available to distributors unable or unwilling to correlate their distribution with manufacturers. Where production processes in any one industry are fairly well standardized, the cost of operations in one well engineered plant will be about the same as in another equally well engineered plant. Distinct cost

advantages then can only be achieved through closer correlation of manufacturing and distribution.

Cost savings from consistently high production levels that fully absorb overhead volumes are obvious, but how many companies, he asked, "have fully explored the possibility of maintaining a consistent planned production through 12 months of operation —or six months or even 90 days at a stretch?"

Long-range demand can be converted into long-range production planning and this planning can be backed up with firm contracts for definite quantities of goods at firm prices.

Ben Robertson, Jr., Sales Mgr. of Reliance Varnish Co.

The Reliance Varnish Co. of Louisville, Ky., announces the appointment of Ben Robertson, Jr., as Sales Manager and assistant to M. J. Pearce, Vice President in Charge of Sales.

Mr. Robertson founded the Robertson Co., manufacturer of wood and metal finishing products, in the fall of 1939, and was the President of that company until his move to Reliance Varnish Co. in Dec. 1952.

In addition to its home office and plant in Louisville, Reliance has factory and laboratory facilities in Chicago, Ill., Bridgeport, Conn., and Asheville, N. C.

Materials Handling Show; Thousands of New Models

Thousands of new models of materials handling equipment, valued at more than $10,000,000, will be displayed by exhibiting companies at the Materials Handling Exposition at Convention Hall, Philadelphia, May 18 to 22.

A test-check of some of the 255 companies which will demonstrate their machines revealed that hundreds of new developments will be shown for the first time at the show. It will be the largest capital goods show to be held anywhere in the country during 1953 and will tax the tremendous capacity of all six halls of Philadelphia's huge auditorium.

Of major interest to visitors will be the stress this year on systems of materials handling. The use of various types of equipment to perform special functions will be emphasized.

T. M. Stokes, New President of Robertson Company

Robertson Company, Inc., Louisville, Ky., manufacturer of wood, metal and paper coatings, announces the election of Mr. Thomas M. Stokes to President.

Mr. Stokes fills the vacancy created by the resignation of Mr. Ben Robertson, Jr., who founded the Robertson Co. in 1939 and who has been president for the past 13 years. Mr. Robertson, Jr., has severed all connections with the Robertson Co. and has joined Reliance Varnish Co., in the position of Sales Manager.

Until his recent election as president, Mr. Stokes was Vice-President in charge of sales for the Robertson Co., Inc.

"That's the most beautiful bleached blonde job I've seen in months."

"Let's Take the Mystery Out of Paint Application"

Here is an extensive, detailed, field report by Lee Turner, with latest information based on actual experience, working with hundreds of paint applicators, under varied conditions and on many different products.

Covers production application of paints by the following methods: Manual spray, automatic spray, electrostatic No. 1 and No. 2, dip tank, roller coat, flow coat, silk screen, tumble, centrifugal.

It's a production report—terse, meaty, down to earth; easily digested by the average layman; an easy comprehensive understanding of problems involved in applying paint on a production basis to get best results with least waste.

Management, buyers, manufacturers, sellers of paints, supervisory personnel, time study, process or methods engineers, the painter, mixing room personnel—all will find an easy continuity which will take them to a more understandable point in pinpointing production paint shop difficulties and remedies needed.

Gives complete unbiased "low down" on temperature in-put in lacquers and enamels.

Will save you dollars on that production line.

Paint companies can cut service calls in half.

Price $5.00 per copy. Order today. Supply is limited. Money back guarantee. Lee Turner, 8240 Sandy Lane, Cincinnati 24, Ohio.

Give Workers Credit For Safety Ideas

★ Safety in the finishing room means little until everyone takes a personal interest in it.

Ask workers to take turns in providing a short sentence or slogan about safety, for use on the bulletin board. Encourage them to talk the matter over with friends and family. Then be sure the name of each employee is prominently displayed with his safety hint when it appears on the finishing department's bulletin board.

Some men may say they have nothing worth mentioning. Hand them some safety literature and suggest they read it for ideas. They may not produce any masterpiece but while studying the subject they will absorb some valuable information on safety.

Management may wish to give a small prize for the best thoughts on safety after all workers have had an opportunity to see their ideas on the bulletin board. Or anything may be printed, together with the men's names, in a small booklet. It won't cost much and it will be the best-read safety literature you ever handed out.

Even if your finishing department goes no farther than tacking the workers' ideas on the bulletin board, you will have succeeded in making your people safety conscious to a far greater extent than ever before.—*G. Dodson.*

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

Have a Problem? Then Tell All the Facts

★ When you get into any finishing trouble and have to ask advice, do this: Tell everything pertinent to the situation, whether you think it has any direct bearing on your trouble or not. Occasionally a combination of things causes the trouble rather than just one single so-an-so.

When you ask about a complex wood finishing problem, start in the cabinet room and tell what, if anything, is done there to the surface of the wood. Follow into the finish room, telling the type of stain, filler, washcoats, toners, glazes, shading stains, sealers, lacquers, rubbing compounds. Give the finishing procedure; and last but not least, give the drying times, temperatures and, if possible, the humidity readings.

After gathering this information, go back and check to be sure there is nothing left out and that every statement is a fact—not just a part of a procedure that *should* have been followed. Whoever you are asking for help can come nearer to giving an intelligent answer when he has all of this data. You will be surprised at the number of times you will be able to diagnose your problem and find the answer yourself, after you have studied all the informative facts before you.—*Herman Hardesty.*

Training in Industry; More Firms Doing It

More "students" are currently going to school in American industry than in all of the country's public school systems, a group of personnel executives was told in Duluth, Minn., recently.

Howard Mold, director of training for Minneapolis-Honeywell Regulator Co., pointed out that more than half

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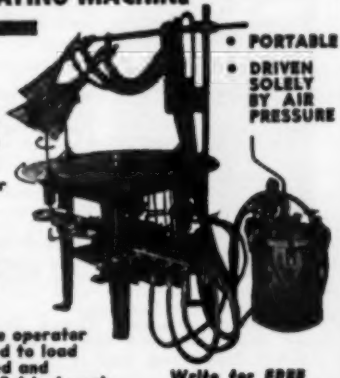
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of the 60 million people in industry are engaged in some kind of training, and that a million supervisors are playing a vital role as teachers.

Addressing the Duluth Conference on Training in Employment Relations, sponsored by the University of Minnesota, Mold said:

"As the biggest educator in the world, American industry should put more emphasis on the basic principle of learning by doing rather than on the techniques of training.

"The lecture is generally a waste of time as far as learning is concerned. A student learns only by doing, and for that reason the effectiveness of his training decreases from the time he leaves the elementary grades. So industry is turning more and more to participatory techniques to bring about learning."

In fact, he pointed out, industry today is often forced to retain people in such subjects as arithmetic and reading because, in the original situation, they didn't feel the need to learn in these fields.

"Industry can't afford the luxury of spoon-feeding students," he said. "We must be concerned with helping people to help themselves. Too many people think training itself is a magic wand. If the colleges and universities did as well in training as the teacher of the kindergarten and elementary grades, we all would accomplish much more. These teachers are concerned with what the students need, with what they want to learn and how best to help them learn."

Salesman Miller had just returned from a tough assignment. When he entered the office his sales manager looked up expectantly and asked:

"Well, did you get an order?"

"Yes; as a matter of fact I got three orders—get out, stay out and don't come back".

ALL KINDS OF HAMMERS . . .
BUT ONLY NATIONAL HAMMER FINISHES
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Leave the Door Open To Salesmen

GOING back about 25 years, when I first started in the business world, I recall an incident I have never forgotten.

A young salesman called at the plant where I was employed. He represented an office supply company, and had asked to see the assistant purchasing agent. The APA told the receptionist that he was satisfied with the carbon paper they were using, and he was not interested in changing at this time.

The purchasing agent, whose desk was near by, overheard this conversation and asked the receptionist to send the salesman in to see him. He listened to the salesman's story and then asked for a dozen sheets to be left for a test. Three hours later the salesman returned and was told that his carbon paper, from actual tests, was far ahead of what the company had been using. Accordingly, the salesman got a new account, the customer saved money, and all concerned were well pleased.

Yes, no matter how insignificant an idea may seem, it pays to listen through and make tests before closing the door on a salesman's ideas or any product he is offering.

Salesmen have often approached me with ideas and products which, had I not listened or given consideration, would have meant a loss to my clients.

Sometimes, I have asked a sales representative why he did not contact the company's representative. The usual answers, in such cases, are: "I have, but could not seem to reach the right person to whom I could show my product"; or "Mr. X didn't have time to see me; he had other things to be taken care of; he promised to give me a call if and when he became interested"; and numerous other reasons which do not make sense. How costly such procedure can be.

None of us can afford to "Close the door on a Salesman"; but that is just what we are doing when we do not allow him a chance to present his ideas or show his product. Regardless

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of how trifling an idea may seem, or how expensive a new product may appear, the salesman's time in making the call should be considered. His time may be as important as ours; could be more so, sometimes.

Some people who read this may say, "Oh, this writer is a salesman with a gripe". Well, that is not so. I am not a salesman and do not represent any company as such. But, by listening to salesmen with whom I come in contact every day, I have learned a lot more about my business. I have also gained valuable experience by allowing salesmen a chance to demonstrate their products for evaluation purposes. In doing so I have often been able to throw out obsolete materials and equipment, which changes have resulted in savings of thousands of dollars annually for my clients. I learned, over 25 years ago, that it never pays to close the door on a salesman. *Always keep the door open.*

Example: Only recently a salesman called and said that he had a couple of items which he thought might interest me. He said that in the past he had approached the person he was told would be interested, but this individual did not seem to be impressed, stating that he had equipment being used for the same purpose, and for a new piece of equipment to take its place, he couldn't see where he could justify the purchase. The salesman was never given an opportunity to demonstrate his ideas or equipment. In other words for the time at least, the door was closed on him.

This salesman, the individual who had brushed him off, and the writer got together that day. After listening to the salesman's story, permission was granted to test the equipment in question. Arrangements were made and plans were followed on schedule. We were all astonished at the remarkable results obtained with the new equipment. It was purchased that day.

Results obtained were as follows: Lower finishing cost per unit, greater sales and eye appeal of the product finishes, and a savings of $10,000 per year, at the then rate of production—and by an investment of only $500. In addition, the new equipment gave the employees in the department a real "lift".

Yes, if we had continued to close the door on Mr. Salesman, we would still be using antiquated ideas with obsolete equipment, and continuing to worry about rejects, loss in production,

poor quality and many other headaches. Always leave the door open; it pays dividends to all concerned.—*C. Raymond Syer.*

Screen Process Printing on Glass

FOR SILK-SCREEN process printing on glass, if any part of the silk screen itself touches a square edge of glass, it may be advisable to protect the silk against possible damage and excessive wear. Regardless of how expertly the glass is cut, its square edges will retain a sharpness that will almost surely damage the silk screen by repeated contact.

A narrow strip of paper adhered to the silk screen, on its printing side, where it contacts the edge of the glass, will usually solve this problem and assure longer useful life to the silk.

Also, in silk screen process printing on glass, one must be careful to determine the correct consistency of the process paint material, to avoid opalescence and blurring when applying colors to the glass. Really, screen process printing on glass is a tricky business, but it is being done successfully every day.—*N. L.*

For Corrosion Control

A new 4-page illustrated bulletin (two colors, 8½x11-in.,) revealing information about "Ucilon Corrosion-Resisting Coatings", is offered free by United Chromium, Inc., 208 S. La Salle St., Chicago 4, Illinois (also in New York City, Waterbury, Conn., Detroit and Los Angeles). The company claims that Ucilon Protective Coatings offer the solution to 101 corrosion problems.

Finishes for Aluminum

Information about cleaning and finishing aluminum, is revealed in Reynolds Metals Technical Advisor, a 4-page free bulletin published regularly by Reynolds Metals Co., 2500 S. 3rd St., Louisville 1, Ky.

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HERE ARE enumerated in this remarkably valuable book of 544 pages, all of the common and a variety of unusual and seldom heard-of defects and objectionable features that occur in paint, varnish, lacquer and synthetic enamel finishes; their probable, possible or real causes given; the effects described, and means of preventing and remedying these troubles fully outlined.

Chapters deal with these defects and troubles as they occur, 1) during or as a result of storage and preparation of materials before finishing; 2) when the materials are applied by various production methods and equipment, 3) during handling, processing or drying after application; and finally, 4) when and after the finished goods are shipped, displayed, stored or placed in service.

Defects covered include many more than could be named here, but to mention just a few there are; runs, sags, tackiness, films, too thin or too thick, slow drying, orange peel, alligatoring, wrinkling, pimples in films, pin holing, cracking, blistering, lifting, bleeding, blushing, blooming, discoloration, rainbow effects, gloss and dull areas, grained appearance, and scores of others.

Practical information is also revealed in reference to safety precautions to prevent fires or accidents in paint shops and finishing rooms, skin troubles of workmen, poisons from paint materials and fumes.

By referring to the "subject Index" of 84 pages in back of the book, it is possible to locate quickly, the answer to any particular failure, cause or remedy.

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Safety is Everyone's Job

SAFETY is the responsibility of management, in all phases and at all levels of an organization. Every member of supervison, from the newest foreman to the top level authority, is responsible for the safety of men and women working with him. Safety practices, subject to continual attention and revision, attempt to anticipate every possible risk that may arise, on the theory that well trained people, using every available precaution, can avoid all personal injuries.

Built-in safety in plant construction, a wide variety of protective clothing, and many ingenious devices are parts of the mechanics of industrial safety. Only one out of ten injuries now is caused by failure of equipment or processes; the other nine may be traced to human error. Let's concentrate on reducing the possibilities of those human errors. Many of them are due to emotional attitudes, fatigue, discontent, an unhappy home life, and other psychological factors.

Acorn Chemical Co. Moves Into New Building

The Acorn Chemical Co., Toledo, Ohio, has recently moved into new quarters at 1644 Campbell St., with added facilities for handling its increasing business. This old company, under new management, has shown a 50% increase in sales for 1952

Acorn Chemical Co.'s new building in Toledo.

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TRADE MARK
Synthetic
PEARL ESSENCE
now at lowest price in ten years

for INDUSTRIAL FINISHES BAKE OR AIR DRY For:

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over 1951 and, from advance orders, anticipates a further increase of at least 50% for 1953.

Acorn has long manufactured a water-wash compound for paint spray booths, and expects to announce the addition of supporting lines within a few months.

Oakite Representative Receives Distinguished Service Award

L. T. Prince, technical service representative of Oakite Products, Inc., manufacturer of industrial cleaning and allied materials, is here shown receiving the D. C. Ball Award for Distinguished Service from John A. Carter, Oakite president.

The award, in the form of a bronze plaque, is presented annually to the member of the firm's nationwide field organization adjudged to have rendered the most outstanding service to industry during the year.

Presentation of the award which is given in memory of David Clifton Ball, pioneer in industrial cleaning procedures, founder of the company, and former chairman of its board of directors, was made at a technical sales conference of Oakite field representatives held recently at the Sheraton Hotel in St. Louis.

John A. Carter (left) and L. T. Prince

Lacquer on Wood Products

A 16-page bulletin entitled, "A Study of the Market for Lacquers for Wood Household Furniture and Allied Wood Products" reveals considerable information of interest to manufacturers of wood products who use finishing materials. A copy can be obtained by writing to Hercules Powder Co., Wilmington 99, Dela.

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Experienced in selling industrial paints, lacquers, enamels. Moderate size, well-known manufacturer has opening for salesman with following in metropolitan New York area. Must have car. Drawing against commissions. Exceptional opportunity for right man. Address IF-950, care Industrial Finishing.

SALESMAN WANTED

To carry an additional line—fast moving, volume repeat item that ties in excellently with finishing room supplies. Exclusive territories available to men with established industrial accounts. Address IF-980, care Industrial Finishing.

PAINT SALESMAN WANTED.

Nationally known paint company needs representative (age 26 years or over) with previous paint selling experience for Western New York State in an established sales territory to call on industrial accounts. Base salary, plus commission and expenses. Address IF-974, care Industrial Finishing.

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Will buy your dirty Thinners and Solvents. Send samples or letters giving approximate contents and solids. Address THE JOHANN CO., 8547 S. Ashland Ave., Chicago, Ill.

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We are interested in purchasing an 8-ft., water curtain spray booth with top exhaust. Must be in good condition. Early delivery required. CHURCHILL LIGHTING CORP., 344 Franklin St., Melrose 76, Mass.

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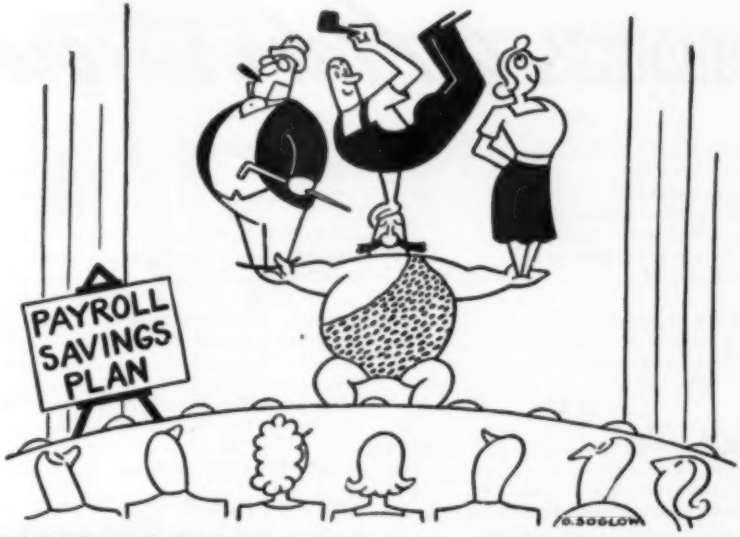

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LET THIS MAN GIVE YOUR NEW FINISH A GOOD START

Before you decide on a new type of finish for your product, it will pay you to talk things over with an Advance service representative.

Chances are, he can point out some shortcuts to lower your finishing costs, and at the same time show you how to sidestep some of the problems that may arise later on.

Each Advance service representative is a specialist in one or more phases of industrial finishing, with wide experience in the application of finishing materials to both wood and metal products.

So, give your new finish a good start. Get in touch with the Advance service representative who knows your field best.

He will hold your plans in strictest confidence.

Advance PAINT COMPANY

Indianapolis Indiana

MANUFACTURERS OF INDUSTRIAL FINISHES

THE INVISIBLE TOOL

at work in the

FORD AUTOMATIC TRANSMISSION PLANT

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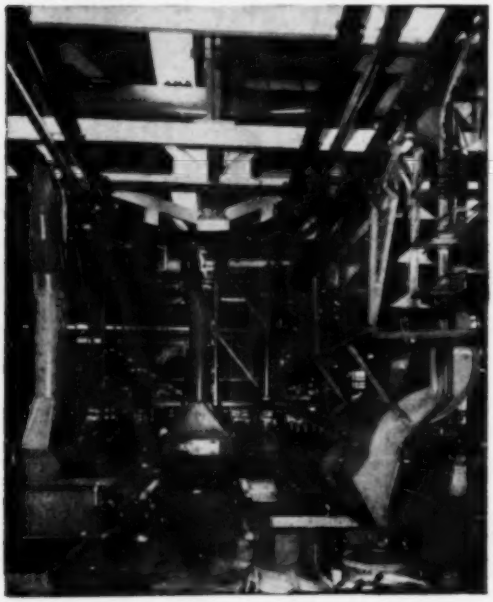

Cleaning tanks in the Finish Grinding Department of the Ford Automatic Transmission plant. These five tanks are fitted with KIRK & BLUM modified lateral cross draft hoods, which remove fumes below the operator's breathing level.

The fumes of chlorinated solvents as well as steam and water vapor from heated soak tanks and washing machines are controlled in this plant by KIRK & BLUM Systems. As shown here, a number of fume collecting points are piped to a ceiling-mounted fan which exhausts outside the plant. Make-up air is furnished by another KIRK & BLUM System.

In the ultra-modern Ford Motor Company Automatic Transmission Plant, 37 distinct KIRK & BLUM Systems aid in the production of Merc-o-Matic and Ford-o-Matic transmissions. In heat treating, quenching, welding, cleaning, machining, woodworking, maintenance and assembly operation, they provide "Clean Air . . . the INVISIBLE Tool" in this model plant.

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